FARGO®
Part of HID Global HID

DTC400 Card Printer/Encoder User Guide (Rev. 2.6)

Designed for Microsoft® Windows® XP

Part Number: L000800

DTC400 Card Printer/Encoder User Guide (Rev. 2.6), property of Fargo Electronics, Incorporated

Copyright © 2007 by Fargo Electronics, Incorporated. All rights reserved. Printed in the United States of America. Exclusive permission is granted to authorized resellers of Fargo products to reproduce and distribute this copyrighted document to authorized Fargo customers, who have signed a "no disclosure agreement" regarding the restricted, proprietary use of said document.

The revision number for this document will be updated to reflect changes, corrections, updates and enhancements to this document.

Revision Control Number	**Date**	**Document Title**
Revision 2.6	1 November 2007	DTC400 Card Printer/Encoder User Guide
Revision 2.5	15 September 2007	Same document title
Revision 2.4	1 August 2007	Same Document Title
Revision 2.3	1 May 2007	Same Document Title
Revision 2.2	1 March 2006	Same Document Title

These reference documents were thoroughly reviewed to provide Fargo with professional and international standards, requirements, guidelines and models for our technical, training and user documentation. At all times, the *Copyright Protection Notice* for each document was adhered to within our Fargo documentation process. This reference to other documents does indicate that Fargo is an ISO-certified company at this time.

ANSI/ISO/ASQ Q9001-2000 American National Standard, (sub-title) Quality Management Systems - Requirements (published by the American Society of Quality, Quality Press, P.O. Box 3005, Milwaukee, Wisconsin 53201-3005)

The ASQ ISO 9000:2000 Handbook (editors, Charles A. Cianfrani, Joseph J. Tsiakals and John E. West; Second Edition; published by the American Society of Quality, Quality Press, 600 N. Plankinton Avenue, Milwaukee, Wisconsin 53203)

Juran's Quality Handbook (editors, Joseph M. Juran and A. Blanton Godfrey; Fifth Edition, McGraw-Hill)

Any questions regarding changes, corrections, updates, or enhancements to this document should be forwarded to:

Fargo Electronics, Incorporated
Support Services
6533 Flying Cloud Drive
Eden Prairie, MN 55344 (USA)
(952) 941-9470
(800) 459-5636
FAX: (952) 941-7836
www.fargo.com
E-mail: sales@fargo.com

Table of Contents

Section 1: Introduction ***1-1***
How to use the manual 1-1
Safety Messages (review carefully) 1-2
DTC400 Card Printer Overview 1-3
Reviewing the DTC400 Block Diagram 1-3
Reviewing the DTC400 Sequence of Operations 1-4
Reviewing the DTC400 Boot up Sequence 1-6

Section 2: Specifications ***2-1***
DTC400 - Regulatory Compliances 2-1
DTC400 - Agency Listings 2-2
FCC Rules 2-2
Environmental Protection (China-RoHS) 2-2
Technical Specifications 2-3
Visual Security Solutions (Specifications) 2-6
VeriMarkTM Cards - 2-D holographic foil application 2-6
Custom HoloMarkTM Cards 2-6
Visual Security - Card Stock Part Numbers 2-7
Visual Security - Fargo Certified Overlaminates (Special Order in 50 quantity minimum) 2-7
Visual Security Card Stock - Tolerances 2-7
VeriMarkTM - Application Specifications 2-7
HoloMark™ and Custom HoloMark™ - Application Specifications 2-8
Functional Specifications 2-9
Printer Components: Front Cover to USB Port 2-10
Printer Components: Print Ribbons 2-11
Printer Components: Resin-Only Print Ribbons 2-12
Printer Components: Dye-Sublimation Print Ribbons 2-13
Printer Components: Dye-Sublimation/Resin Print Ribbons 2-14
Printer Components: Blank Cards 2-15

Section 3: Setup and Installation Procedures ***3-1***
Printer Setup and Installation 3-2
Choosing A Good Location 3-2
About Moisture Condensation 3-2
Unpacking and Inspection 3-3
Reviewing the Printer (front view) 3-3
Reviewing the Printer (front view; Cartridge being installed) 3-4
Reviewing the LCD (top-front part of Printer) 3-4
Connecting the Printer power 3-5
Installing the Print Ribbon Cartridge 3-6
Installing Blank Cards into the Card Hopper 3-9
Lowering the Card Output Hopper 3-12
Flipper Table Module Installation 3-13
Installing the Flipper Table Module Assembly (D900200) 3-14
Printer Driver Installation 3-17
Installing the DTC400 Printer Driver 3-17
Printing a Test Print Image 3-26
Printer Transport 3-28
Moving the Printer to another location 3-28

Section 4: General Troubleshooting ***4-1***
Safety Messages (review carefully) 4-2
Communications Errors 4-3
Resolving the Communication Errors 4-3

Print Process Errors 4-5
Resolving a Card Not Fed Error (Cards will not feed off the Hopper) 4-5
Resolving a Card Not Fed Error (Two (2) or more card feed at the same time) 4-8
Resolving a Ribbon RFID Error (Ribbon RFID Antenna is Corrupted) 4-10
Resolving a Ribbon RFID Error (Ribbon RFID Sensor is Corrupted) 4-12
Resolving the Mag Verify Error 4-13
Resolving the No Mag Installed Error 4-16
Resolving a Ribbon Sensor Error (Ribbon Miscue) 4-18
Resolving a Ribbon Break Jam Error 4-20
Resolving a Ribbon Out Error 4-22
Resolving a No Ribbon Installed Error 4-23
Resolving a Invalid Ribbon Error 4-25
Resolving a Wrong Ribbon Error 4-27
Resolving a Card Jam Error 4-29
Resolving a Headlift Motor or Sensor Error 4-31
Resolving the Cover Open Error Message 4-33
Resolving the Blank Output issues 4-34
Flipper Table Module Assembly Problems 4-37
Resolving the No Flipper Table Module problem 4-37
Resolving the Flipper Jam Error 4-38
Diagnosing Image Problems 4-40
Resolving the Pixel Failure problems 4-40
Resolving the Card Surface Debris problems 4-41
Resolving the Incorrect Image Darkness problems 4-42
Resolving Ribbon Wrinkle problems 4-44
Resolving the Excessive Resin Printing problems 4-46
Resolving the Incomplete Resin printing problems 4-48
Resolving the Image Placement problems 4-49
Resolving the Poor Image Quality problems 4-52
Running the Self Test 4-53
Running the Standard Self Test Print 4-53
Running the Magnetic Self Test (HiCo Only) 4-54

Section 5: Ethernet Option 5-1

Introduction 5-1
Technical Specification - Ethernet Option 5-1
Functional Specification - Ethernet Option 5-2
Network Services - Overview 5-3
Reviewing the Print Server 5-3
Reviewing the Web Page Server 5-3
Reviewing the Network Management Interface 5-3
Reviewing the Telnet Server 5-3
Network Management Interface 5-4
Telnet Command Line Interface 5-4
Initiating a Telnet Session 5-4
Reviewing the Telnet Command Table 5-5

Ethernet Web Pages – Standard Procedures 5-11
Reviewing Web page security 5-11
Logging In 5-12
Accessing the Home page 5-13
Reviewing the Home Page 5-14
Reviewing the Home Page Categories and Fields (table) 5-15
Configuring the Network Settings 5-16
Accessing the Network Settings page 5-16
Reviewing the Interface 5-17

Reviewing the Current Settings 5-17
Switching to the automatic IP address mode 5-18
Changing to the static IP address mode 5-19
Entering the TCP Window Size 5-21
Using the Clear Changes button 5-22
Using the Print Path page 5-23
Using the Ribbon Information page 5-25
Using the TCP/IP page 5-26
Using the TCP/IP Status Web Page 5-27
Using the Printer page 5-28
Using the System Log page 5-30
Changing the Log Name 5-31
Selecting the Log Type 5-33
Selecting the Log Destination 5-34
Setting up Email Event logging 5-35
Specifying UDP Event logging 5-36
Specifying TCP Event logging 5-38
Using the Administration pages 5-40
Using the System Information page 5-40
Changing the Root Password 5-42
Upgrading the Print Server 5-44
Using the Reboot pages 5-46
Rebooting the Ethernet Server 5-46
Resetting to Default Settings 5-48
Using the Help page 5-49

Additional Procedures 5-50
Reviewing LED and Dipswitch Tables 5-50
Reviewing the LED Table 5-50
Reviewing the Dip Switches 5-51
Upgrading the Main Firmware with the Fargo Workbench Printer Utility 5-52
Restoring the Factory Settings for Ethernet 5-54
Restoring the Default Settings 5-54
Accessing the IP address of your Printer 5-55
Accessing the DTC400 IP address 5-55
Ethernet Printer Troubleshooting Procedures 5-56
Troubleshooting procedures 5-56
Verifying the Printer Connection 5-57
Verifying the Printer IP address 5-57
Verifying that your PC can access the Printer using the ping command 5-58
Printing a test page 5-59

Reviewing Frequently-asked Questions 5-60

Glossary of Terms 5-66

Section 6: Printer Adjustments 6-1
DTC400 Print Driver Options 6-2
Using the Card tab (DTC400) 6-2
Adjusting the Card Size Option 6-2
Adjusting the Orientation Option 6-3
Selecting the number of copies 6-4
Using the Diagnostics button under the Card tab 6-5
Using the Clean Printer Option 6-6
Using the Test Print button 6-8
Using the About button 6-9
Using the Device Options tab (DTC400) 6-10

Reviewing the Device Options tab (DTC400) 6-10
Adjusting the Ribbon Type option 6-11
Selecting the Auto Ribbon Select option 6-12
Adjusting for the Resin Dither 6-14
Using the Print Both Sides option 6-15
Using the Split 1 Set of Ribbon Panels option 6-16
Using the Print Back Side First option 6-17
Using the Print Back Side Only option 6-18
Using the Rotate Front 180 Degrees or Rotate Back 180 Degrees options 6-19
Using the Disable Printing option 6-20
Using the Image Color tab 6-21
Using the Resin Heat (K) option (Front and Back) 6-22
Using the Overlay Heat (O) option 6-23
Using the Color Matching option and Default button 6-24
Using the Calibrate tab 6-25
Using the Image Position Controls 6-26
Using the Sensors button 6-28
Using the Settings button 6-29
Using the Magnetic Encoding tab 6-30
Using the Encoding Mode radio buttons 6-31
Using the Magnetic Track Selection radio buttons 6-32
Using the Magnetic Track Options radio buttons 6-34
Using the Bit Density radio buttons 6-35
Using the Character Size radio buttons 6-36
Reviewing the Enable MLE Support checkbox 6-37
Using the ASCII Offset radio buttons 6-38
Using the LRC Generation radio buttons 6-39
Using the Character Parity radio buttons 6-39
Using the Shift Data Left checkbox 6-40
Reviewing the ISO Track Locations 6-41
Sending the Track Information 6-42
Entering the Track Information 6-42
Reviewing Tracks 1, 2 and 3 (in table format) 6-43
Reviewing the Track Data Note 6-43
Reviewing the ASCII Code and Character Table 6-44
Using the Overlay / Print Area tab 6-45
Using the Front and Back options 6-46
Using the Front option (Overlay / Print Area) 6-47
Using the Back option (Overlay / Print Area) 6-48
Using the Overlay / Print Area dropdown menu 6-49
Using the Overlay / Print Area 6-51
Using the Defined Area Option 6-53
Using Security Options (Visual Security Solutions) (Front option only) 6-58
Selecting Orientation - Landscape under Card tab 6-59
Selecting the Visual Security Solutions dropdown menu (A to D) 6-60
Selecting Orientation - Portrait under Card tab 6-61
Selecting the Visual Security Solutions dropdown menu (E to H) 6-62
Selecting the VeriMark radio button (Frontside option only) 6-63
Selecting HoloMark (Front option only) 6-64
Reviewing the Custom VeriMark Card (Custom Graphic in a 2D foil) 6-65
Reviewing the Custom HoloMark Card (Custom Graphic in a 2D foil) 6-66
Using the K Panel Resin tab 6-67
Enabling the Frontside and Backside options 6-68
Enabling the Frontside option (K Panel Resin) 6-69
Enabling the Backside option (K Panel Resin) 6-70
Selecting from the Print All Black with K Panel options (Front and Back options) 6-71

Selecting the Full Card option (Front and Back options) 6-72
Selecting the Defined Area(s) option (Front and Back options) 6-73
Selecting the Undefined Area(s) option (Front and Back options) 6-74
Selecting the Defined Area(s) function (Front and Back options) 6-75
Selecting the Print YMC under K and Print K Only options 6-82
Using the Printer Supplies tab (DTC400) 6-83
Reviewing the Ribbon Information 6-84
Reviewing the Ribbon Level Indicator 6-85
Using the Printer Calibration Utility (DTC400) 6-86
Using the Image Darkness Option 6-87
Using the Print Top of Form Option 6-88
Using the Print End of Form Option 6-89
Using the Print Left of Form Option 6-90
Using the Magnetic Encoder Voltage Offset Option 6-91
Adjusting the Hi-Co Voltage Offset 6-92
Adjusting the Lo-Co Voltage Offset 6-93
Using the Mag Top of Form Option 6-94
Using the Ribbon Tension Option 6-96
Using the LCD Contrast Option 6-96
Using the Flipper Home Offset Option 6-97
Using the Flipper Center Offset Option 6-97
Using the Flipper Smart Angle Offset Option 6-98

Section 7: Cleaning 7-1
Safety Messages (review carefully) 7-1
Using the Required Supplies 7-2
Cleaning Procedures 7-3
Cleaning the Printhead 7-3
Cleaning the Card Feed and Cleaning Rollers 7-4
Cleaning the Printer's Interior 7-5

Section 8: Packing the Card Printer 8-1

Section 9: Board Level Diagnostics 9-1
Safety Messages (review carefully) 9-1
Sensor and Motor 9-2
Reviewing the Sensor Location and Voltages 9-2
Reviewing the Motor Voltages (when active) 9-2

Section 10: Menu Option Tree 10-1
Accessing the Menu Option Structure Tree 10-1
Selecting from the Menu Option Structure Tree (displayed, below) 10-1

Section 11: Fargo Workbench Printer Utility 11-1
Reviewing the Card tab and Diagnostic button 11-1
Placing the Printer in the Firmware Upgrade Mode 11-1

Section 12: Firmware Updates 12-1
Performing the Firmware Updates 12-1

Section 13: Fargo Technical Support 13-1
Contacting Fargo Technical Support 13-1
Reading the Serial Numbers on a Fargo Printer 13-2
Finding out when a Fargo Card Printer was manufactured 13-2
Reviewing Example No. 1: Serial Number 80453289 13-2
Reviewing Example No. 2: Serial Number A1280224 13-2

Section 14: Glossary of Terms 14-1

Section 15: Index_____ 15-1

Section 1: Introduction

How to use the manual

The DTC400 Card Printer/Encoder User Guide (Rev. 2.6) is, in fact, the troubleshooting manual for the entire card Printer. The manual is designed to provide Installers and Technicians with quick, efficient lookup of related procedures, components and terms. The manual can be used effectively either in soft or hard copy, depending on the preference of the Installer or Technician.

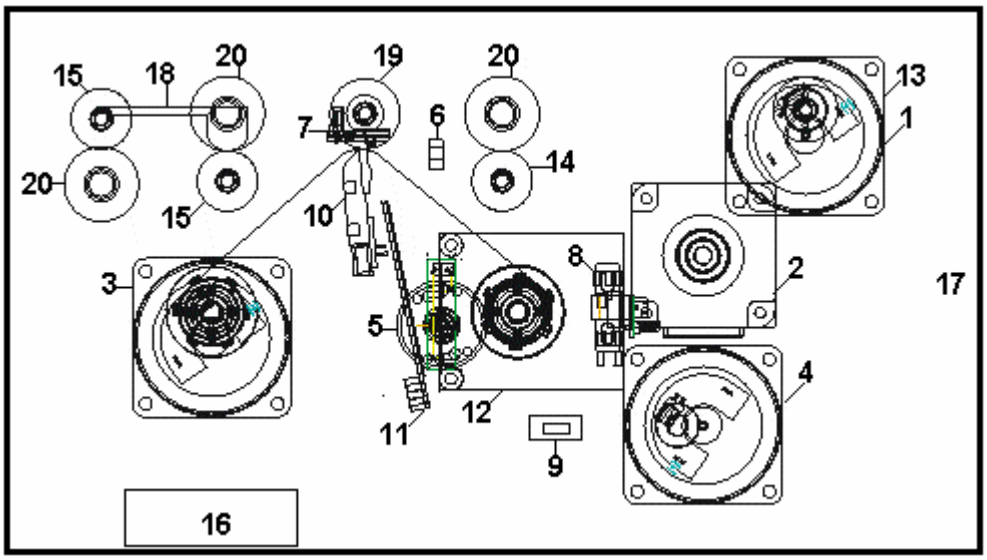
Manual	**Description**
Sequence of Operations, Glossary of Terms and Technical/Functional Specifications (hyper-linked)	You can go directly to the Sequence of Operations, Glossary of Terms, Technical Specifications and Functional Specifications to learn how to use the processes, procedures, functions and windows for the card Printer within concise, correlative tables.
Table of Contents (hyper-linked)	You can use the automated Table of Contents to quickly locate, for example, an error message, a procedure, the index, or an appendix.
Troubleshooting, Replacement, Removal, Diagnostic and Navigation Procedures (in hyper-linked Sections)	You can go directly to Specifications, General Troubleshooting, Printer Adjustments, Printer Packing, Board Level Diagnostics, LCD On-Line Menu Navigation and Firmware Updates to find troubleshooting procedures. The section titles are always labeled according to their function for consistent usage.
Cross-Referencing (hyper-linked)	You can use the cross-referencing links to quickly locate, for example, an error message or a procedure.
Comprehensive Index (hyper-linked)	You can use the COMPREHENSIVE INDEX to quickly locate information on the card Printer, relating to a specification, a procedural step, a window or screen, a component, a term, a qualifier, or a related feature to this Printer.

Safety Messages (review carefully)

Symbol	Critical Instructions for Safety purposes
Danger:	**Failure to follow these installation guidelines can result in death or serious injury.** Information that raises potential safety issues is indicated by a warning symbol (as shown to the left). • **To prevent personal injury**, refer to the following safety messages before performing an operation preceded by this symbol. • **To prevent personal injury**, always remove the power cord prior to performing repair procedures, unless otherwise specified. • **To prevent personal injury**, make sure only qualified personnel perform these procedures.
Caution:	**This device is electro statically sensitive. It may be damaged if exposed to static electricity discharges.** Information that raises potential electrostatic safety issues is indicated by a warning symbol (as shown to the left). • **To prevent equipment or media damage**, refer to the following safety messages before performing an operation preceded by this symbol. • **To prevent equipment or media damage**, observe all established Electrostatic Discharge (ESD) procedures while handling cables in or near the Circuit Board and Printhead Assemblies. • **To prevent equipment or media damage**, always wear an appropriate personal grounding device (e.g., a high quality wrist strap grounded to avoid potential damage). • **To prevent equipment or media damage**, always remove the Ribbon and Cards from the Printer before making any repairs, unless otherwise specified. • **To prevent equipment or media damage**, take jewelry off of fingers and hands, as well as thoroughly clean hands to remove oil and debris before working on the Printer.

DTC400 Card Printer Overview

Reviewing the DTC400 Block Diagram



Motors	
1	Card Feed
2	Print Stepper
3	Ribbon Drive
4	Print Headlift
5	Ribbon Rewind Motor

Sensors	
6	Card Feed
7	Ribbon Sensor
8	Ribbon Encoder
9	Headlift Sensor
10	Printhead Thermistor
11	Ribbon LED SNR
12	RFID Antenna

Parts	
13	Card Input Roller
14	Cleaning Roller
15	Card Feed Roller
16	Printhead Cooling Fan
17	Card Input Hopper
18	Magnetic Encoding Head Module
19	Platen Roller
20	Pinch Roller

Reviewing the DTC400 Sequence of Operations

The following sequence describes a full color print job with magnetic encoding.

Step	Process
1	The File information is received from the PC
2	Printer checks the installed Ribbon type stored in memory against the Ribbon type command that was sent from the Printer. a. If Ribbon type does not match, a Wrong Ribbon Error will occur.
3	The Card Input Motor and Print Stepper Motor engage.
4	The Card Feed Sensor detects leading edge of card and disengages the card input Motor.
5	The Print Ribbon Drive engages.
6	The Print Ribbon Sensor looks for the color transition from Yellow to Magenta. Print Ribbon Encoder detects number of revolutions required to use an entire color panel.
7	The Print Stepper Motor engages.
8	The Card Feed Sensor detects trailing edge of card.
9	The Print Stepper Motor queues card to the middle of the platen Roller. All Stop
10	The Print Headlift Motor engages.
11	The Print Headlift Sensor detects closed state.
12	The Print Headlift Motor disengages.
13	The Print Stepper Motor engages.
14	The Print Cover Sensor checks for a closed state.
15	The Ribbon Drive Motor engages.

Reviewing the DTC400 Sequence of Operations

Step	Process
16	The Image data is burned by the Printhead until image data is depleted. All Stop.
17	The Thermistor engages Printhead Cooling Fan to maintain proper operating temperature.
18	The Headlift Motor engages.
19	The Print Headlift Sensor detects an open state.
20	The Print Headlift Motor disengages.
21	The Print Stepper Motor engages.
22	The Print Ribbon Drive engages.
23	The Card Feed Stepper Motor engages to queue card for magnetic encoding.
24	The Encoding data is written to the card.
25	The Card Feed Stepper will re-queue card for each verification pass required.
26	After Ribbon advances a few encoder clicks, assume Ribbon free of card. All Stop.
27	Repeat steps 9 through 23 for appropriate number of color/overlay panels.
28	The Card is ejected from the singled-sided Printer. **OR** The Card Feed Stepper engages to queue the card for the Flipper Table for the dual-sided Printer.
29	All Stop.

Reviewing the DTC400 Boot up Sequence

Step	Process
1	On Power up, the Printer checks the current state of the Card Feed Sensor and the Headlift Sensor.
2	If the Headlift Sensor is found to be open, the Headlift Motor will turn until a closed state is seen.
3	If the Card Feed Sensor is found to be blocked, the Card Feed Stepper will engage to eject the card.

Section 2: Specifications

The purpose of this section is to provide the User with specific information on the Regulatory Compliances, Agency Listings, Technical Specifications and Functional Specifications for the DTC400 Card Printer User Guide (Rev. 2.6).

DTC400 - Regulatory Compliances

Term	Description
CSA (cUL)	The Printer manufacturer has been authorized by UL to represent the Card Printer as CSA Certified under CSA Standard C22.2 No. 60950-1-03. **File Number:** E145118
FCC	The Card Printer complies with the requirements in Part 15 of the FCC rules for a Class A digital device. (**Note:** These requirements are designed to provide reasonable protection against harmful interference in a residential installation.) If equipment operation in a residential area causes unacceptable interference to radio and TV reception, the operator is required to take whatever steps are necessary to correct the interference.
ITS-EMC	The Card Printer has been tested and complies with EN55022 Class A: 1995 and EN82082-1: 1997 standards for EMI emissions. (**Note:** Based on the above testing, the Printer manufacturer certifies that the Card Printer complies with all current EMC directives of the European Community and has placed the CE mark on the Card Printer.) **License Number:** J99032510
UL	The Card Printer is listed under UL IEC 60950-1 (2001) INFORMATION TECHNOLOGY EQUIPMENT. (**Note:** This product is intended to be supplied by a Listed Power Unit marked "Class 2" and rated for 24 V dc, 2.5 to 5 A.) **File Number:** E145118

DTC400 - Agency Listings

Term	Description
Emissions Standards	CE, FCC, CRC c1374, EN 55022 Class A, FCC Class A, EN 55024: 1998, EN 61000-3-2 and EN 61000-3-3.
Safety Standards	UL IEC 60950-1 (2001), CSA C22.2 No. 60950-1-03.

Caution: For safety purposes, Ethernet is not intended for a direct connection outside of the building.

FCC Rules

This device complies with Part 15 of the FCC rules. Operation is subject to the following two conditions:

(1) This device may not cause harmful interference.

(2) This device must accept any interference received, including interference that may cause undesired operation.

Note: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

Reference the Safety Messages in this document.

Environmental Protection (China-RoHS)

Environmental Protection Use Period is based on the product being used in an office environment.

Technical Specifications

Type	Description
Accepted Standard Card Sizes	CR-80 (3.375"L x 2.125"W / 85.6mmL x 54mmW)
Accepted Card Thickness	20 mil and 30 mil (.030" / .76mm)
Accepted Card Types	PVC or polyester cards with polished PVC finish; monochrome resin required for straight polyester
Agency Listings	**Safety:** UL IEC 60950-1 (2001), CSA C22.2 No. 60950-1-03. **Emissions:** CE, FCC, CRC c1374, EN 55022 Class A, FCC Class A, EN 55024: 1998, EN 61000-3-2 and EN 61000-3-3.
Card Input Hopper Capacity	100 cards (30 mil)
Colors	Up to 16.7 million (monochrome)
Dimensions	**Single-sided Dimensions:** 6.7"H x 13.1"W x 10.5"D / 170mmH x 333mmW x 267mmD

Technical Specifications (continued)

Type	Description
Humidity	20-80% non-condensing
Interface	USB 1.1
Memory	2MB RAM
Operating Temperature	65° to 80° F / 18° to 27° C
Print Area	CR-80 edge-to-edge
Printer Drivers	Windows 2000 and Windows XP
Print Method	Dye-Sublimation/Resin Thermal Transfer
Print Speed	• 7 seconds per card / 514 cards per hour (K)* • 12 seconds per card / 300 cards per hour (KO)* • 27 seconds per card / 133 cards per hour (YMCKO)* • 35 seconds per card / 102 cards per hour (YMCKOK)* • 35 seconds per card / 102 cards per hour (YMCFKO)* * Indicates the ribbon type and the number of ribbon panels printed where Y=Yellow, M=Magenta, C=Cyan, K=Resin Black, O=Overlay, F=Fluorescent **Print speed indicates an approximate batch print speed and is measured from the time a card feeds into the printer to the time it ejects from the printer. Print speeds do not include encoding time or the time needed for the PC to process the image. Process time is dependent on the size of the file, the CPU, amount of RAM and the amount of available resources at the time of the print.

Technical Specifications (continued)

Type	Description
Resolution	300 dpi (11.8 dots/mm)
Supply Voltage	100-240 VAC, .6-1.3 A (**Note:** This product is intended to be supplied by a Listed Power Unit marked "Class 2" and rated for 24 V dc, 2.5 to 5 A.)
Supply Frequency	50 Hz/60 Hz
System Requirements	IBM-PC or compatible; Windows 2000 and Windows XP ; Pentium™ class 500 MHz computer with 256 MB of RAM or higher, 500 MB free hard disk space or higher, USB 1.1
System Requirements	IBM-PC or compatible; Windows 2000 and Windows XP ; Pentium™ class 500 MHz computer with 256 MB of RAM or higher, 500 MB free hard disk space or higher, USB 1.1
Warranty	**Printer:** Two year (including On-Call Express, U.S. only); optional Extended Warranty Program (U.S. only); see below for more detail. • Two (2) Year Factory Warranty • Covers parts and depot repair • First year On-Call-Express (loaner printer) • 2nd year On-Call-Express available for a fee. This must be purchased before the first year On-Call-Express expires. • Extended Warranties available **Printhead:** One year, unlimited pass with UltraCard Cards
Weight	**Single-sided Printer:** 15 lbs. / 7 kg

Visual Security Solutions (Specifications)

VeriMarkTM Cards - 2-D holographic foil application

VeriMarkTM Cards are a low cost, customized 2-D holographic foil application, that is made in two steps.

- The first step is to emboss a base foil 1.9 cm (L) x 1.3 cm (H) onto the surface of a blank white card.
- The second step is debossing a custom-made dye into the surface of the base foil - leaving a customized image, logo or text provided by the customer.
- Two separate color foils are used to contrast the impression.

End Users will be able to choose between 8 different card placements (4 - landscape) and (4-portrait) where the VeriMarkTM can be located. When its time to print through the Driver, the End User will select the location on their organizations card design around which no printing and overlay will be placed.

Custom HoloMarkTM Cards

A Custom HoloMark TM Card is a three-dimensional holographic image transferred to metal foil and embossed to blank cards. The image is customer specific and the program mirrors our holographic laminates program with a couple exceptions.

Visual Security - Card Stock Part Numbers

All Visual Security Cards will be offered on the following Fargo Card Stocks only:

- Part No. 81754 Ultra Card
- Part No. 81762 Ultra Card III with hi-coercivity magnetic stripe
- Part No. 81763 Ultra Card III

Visual Security - Fargo Certified Overlaminates (Special Order in 50 quantity minimum)

- Part No. 82255: PolyGuard 1.0 mil for HoloMarkTM and VeriMarkTM Cards, Clear
- Part No. 82256: PolyGuard 1.0 mil for HoloMarkTM and VeriMarkTM Cards, High Resolution Globe design hologram with "Secure" micro-text

Visual Security Card Stock - Tolerances

- Tolerance of base foil placement will equal +/- .010" from the nearest edges of the card
- Tolerance of layered foil will equal +/- .010"

VeriMarkTM - Application Specifications

VeriMarkTM foils will cover a dimensional area of 1.9 cm length x 1.3 cm height. The exclusive areas are as follows:

- VeriMarkTM Card customers will be able to choose 1 of 8 pre-defined placements (corners) via Printer Driver (4 positions) Landscape and (4 Positions) Portrait mode.
- VeriMarkTM foil placement will not interfere with card punch slots.
- Foil color base is silver; debossed impression is gold foil.
- VeriMarkTM foil placement will be located 0.4 cm from the edges of the card except for the top two locations on portrait orientation cards (positions E & F). The foil will be located 0.9 cm from the top of the card and 0.4 cm from the sides of the card.

HoloMark™ and Custom HoloMark™ - Application Specifications

HoloMark and Custom HoloMark foils will cover a dimensional area of 1.5 cm x 1.5 cm. The exclusive areas are as follows:

- HoloMark and Custom HoloMark card end-users will be able to choose 1 of 8 pre-defined placements (corners) via Printer Driver (4 positions) Landscape and (4 positions) Portrait mode.
- HoloMark foil placement will not interfere with card punch slots.
- Foil Color options will be silver or gold.
- Outside edge placement of Foil impression options on card will be 0.4 cm from edge of card.
- HoloMark foil placement options will be at all four corners of card located 0.4 cm from edge of card.

Functional Specifications

This Card Printer utilizes two different, yet closely related printing technologies to achieve its remarkable direct-to-card print quality for dye-sublimation and resin thermal transfer. The Card Printer will print from any IBM-PC® or compatible running Windows™ 2000 or Windows XP.

The following describes how each of these technologies works:

Function	Description
Dye-Sublimation	Dye-Sublimation is the print method the DTC400 uses to produce smooth, continuous-tone images that look truly photographic. (**Note:** This process uses a dye-based Ribbon roll that is partitioned by a number of consecutive color panels.) The panels are grouped in a repeating series of these three process colors along the entire length of the Print Ribbon: yellow, magenta and cyan or YMC. The Printer always prints the yellow panel first, followed by the magenta panel and the cyan panel. (**Note:** As the Print Ribbon passes beneath the Printhead, hundreds of thermal elements within the Printhead heat the dyes on the Ribbon. When these dyes are heated, they diffuse into the surface of the card. A separate pass is made for each of the three color panels on the Ribbon.) By combining the colors of each panel and by varying the heat used to transfer these colors, it is possible to print up to 16.7 million different shades of color. (**Note:** This blends one color smoothly into the next, producing photo-quality images with absolutely no dot pattern.)
Resin Thermal Transfer	Resin Thermal Transfer is the print method the Printer uses to print sharp black text and crisp bar codes, which can be read by both infrared and visible-light bar code scanners. • Used to print ultra-fast, one-color ID cards on the DTC400. (**Note:** Like dye-sublimation, this process uses the same thermal Printhead to transfer color to a card from a resin-only Print Ribbon or the resin black (K) panel of a full color Print Ribbon.) • Solid dots of resin-based ink are transferred and fused to the surface of the card. (**Note:** This produces durable, saturated printing.)

Printer Components: Front Cover to USB Port

Components	Description
Front Cover	Opens to allow access to the Ribbon Cartridge. (**Note:** This cover must be closed in order for the Printer to begin printing.)
Printhead	The component of the Printer that actually does the printing. (**Note:** This component is fragile and must not be bumped or touched with anything other than a cleaning swab.)
Cancel button	The **Cancel** button ⏻ turns the Printer ON and OFF. (**Note:** It also serves to cancel the current print job and reset the Printer for the next print job.) If a card is left within the Printer after a print job is canceled, it will automatically be ejected when the Printer is turned back ON.
Pause button	The **Pause** button is used to pause the Printer during normal operation and also to resume operation after an error condition is cleared. (**Note:** In general, as the icon above this button indicates, errors are related to either the Ribbon or the cards. If an error occurs, the Pause LED will flash.)
Card Cleaning Roller	Automatically cleans cards for higher print quality. (**Note:** Clean the Card Cleaning Roller during every Ribbon change, as needed.)
Card Input Hopper	Load blank cards into this Hopper.
Flipper Cover	Opens to allow access to the Card Flipper.
E-Card Ports	Connects to the Printer's E-Card Stations.
Power Port	Connect to the included power cord.
USB Port	Connect to a Windows PC with a USB cable.

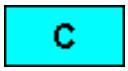
Printer Components: Print Ribbons

The Card Printer utilizes both dye-sublimation and/or resin thermal transfer methods to print images directly onto blank cards. Since the dye-sublimation and the resin thermal transfer print methods each provide their own unique benefits, Print Ribbons are available in resin-only, dye-sublimation-only and combination dye-sublimation/resin versions.

To make it easier to remember which Print Ribbons are which, a letter code has been developed to indicate the type of Ribbon panels found on each Ribbon. This letter code is as follows:

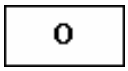
= Dye-Sublimation Yellow Panel

= Dye-Sublimation Magenta Panel

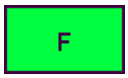


= Dye-Sublimation Cyan Panel

= Resin Black Panel



= Clear Protective Overlay Panel



= Ultra Violet Fluorescing Panel

Printer Components: Resin-Only Print Ribbons

Resin-only Print Ribbons consist of a continuous roll of a single resin color. No protective overlay panel (O) is provided since resin images do not require the protection of such an overlay. The following resin-only Ribbon types are available for use with both DTC400:

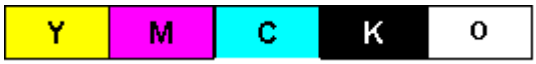
Type	Description
Standard Resin Black (K) (provides 1,000 prints)	This Ribbon provides high resin durability ideal for most general-purpose monochrome ID card applications. Resin black bar codes are readable by both infrared and visible-light bar codes scanners.
Premium Resin Black (K) (provides 1,000 prints)	This Ribbon provides maximum resin durability ideal for applications such as access control where cards are repeatedly swiped through a Magnetic Stripe reader. Resin black bar codes are readable by both infrared and visible-light bar codes scanners. (**Note:** Using a Premium Resin Black Ribbon will provide better photo realistic output.)
Colored Resin (provides 1,000 prints)	Several colored resin Ribbons are available in a variety of colors for customizing or color-coding resin-only ID cards.
Metallic Resin (provides 1,000 prints)	Metallic resin Ribbons are available for printing resin images with a unique metallic sheen.

Printer Components: Dye-Sublimation Print Ribbons

The Printer requires both specialized and authorized Print Ribbons in order to print and function properly.

Step	Procedure
1	Do not run the cards with a contaminated, dull, or uneven surface through the Printer. **Caution:** Printing onto such cards will ultimately lead to poor print quality and will greatly reduce the life of the Printhead.
2	Always store the card stock in its original packaging or in a clean, dust-free container.
3	Do not print onto cards that have been dropped or soiled. (**Note:** Printhead damage caused by contaminated or poor quality cards will automatically void the Printhead's factory warranty.)
4	If printing onto cards with a pre-punched slot, do not print over the area of the card with the punched slot. (**Note:** To avoid this area when printing, use the options in the Overlay / Print Area tab to omit printing in this area, or punch the slot after the card has printed.)

Printer Components: Dye-Sublimation/Resin Print Ribbons

Type	Description
Dye-Sublimation/ resin Print Ribbon	The Dye-Sublimation/resin Print Ribbon combines the yellow (Y), magenta (M) and cyan (C) dye-sublimation panels with a resin black (K) panel. By combining both types of Ribbon panels, this Ribbon can be used to print full-color, photo-quality images with the dye-sublimation panels along with sharp, black text and bar codes with the resin black panel. A clear overlay panel (O) is also included on most Ribbons to protect the dye-sublimation images. Dye-Sublimation images must have an overlay panel applied to them, or they will quickly begin to wear or fade.
Full-Color (YMCKO) (provides 250 prints)	This Ribbon is used to print full-color photo ID cards along with resin black text and bar codes. Both infrared and visible-light bar code scanners can read bar codes printed with resin black. • An overlay panel (O) is included to protect the full-color dye-sublimation printing. 
YMCKOK	The designation of colored ribbon by the Panels of color in the order in which they are printed: Yellow (Y), Magenta (M), Cyan (C), Black (K), Overlay (O), Black (K) (used for backside, black only printing).
YMCFKO	The designation of colored ribbon by the Panels of color in the order in which they are printed: Yellow (Y), Magenta (M), Cyan (C), Black (K), Overlay (O), (used for backside, black only printing).

Printer Components: Blank Cards

Type	Description
Card Size	The Card Printer accepts standard CR-80 sized cards (3.370"L x 2.125"W / 85.6mmL x 54mmW) with a thickness of 20 to 30 mil (.030"/.762mm).
Card Design	The Printer will print onto any card with a clean, level and polished PVC surface. Although the Printer is equipped with card cleaning Rollers, it is very important to always print onto cards specifically designed for direct-to-card dye-sublimation printing.
Card Surface	Suitable cards must have a polished PVC surface free of fingerprints, dust, or any other types of embedded contaminants. In addition, cards must have a completely smooth, level surface in order for the Printer to achieve consistent color coverage. Certain types of Proximity cards have an uneven surface that will inhibit consistent color transfer. • Certain types of smart card chips are raised slightly above the cards surface which also results in poor color transfer.
UltraCard Stock	Due to the importance of using high-quality blank cards, a factory-approved card stock called UltraCard™ is available and recommended for best results. • UltraCard stock has a glossy PVC laminate on top and bottom and is optically inspected to provide the cleanest, most scratch and debris-reduced cards possible. • Two types of these cards are available: UltraCard and UltraCard III. UltraCard stock has a PVC core and offers medium card durability. UltraCard III stock has a 40% polyester core and offers high durability. • Both types of UltraCards produce printed images with a glossy, photo-quality finish.

Section 3: Setup and Installation Procedures

The following guide will walk you through the installation of the DTC400 Card Printer Driver.

- **Time Requirement (software):** This software installation process will require approximately 2 to 5 minutes (depending on the speed of your PC).
- **Time Requirement (Printer):** The time required to set up a standard DTC400 Printer would be approximately 5 to 10 minutes.

The System Requirements are as follows:

IBM-PC or compatible, Windows® 98SE, Me/2000/XP, Pentium® class 233MHz computer with 64MB of RAM or higher, 200MB free hard disk space or higher, USB 1.1

Printer Setup and Installation

Choosing A Good Location

Follow these guidelines:

- Place the unit in a location with adequate air circulation to prevent internal heat build up.
- Use the Printer's dimensions as a guideline for the minimum clearances to the unit. (**Note:** Allow for adequate clearance in front of the unit to accommodate the unit with its Covers open.)
- Do not install unit (a) near heat sources such as radiators or air ducts, or (b) in a place subject to direct sunlight, excessive dust, mechanical vibration or shock.

About Moisture Condensation

If the unit is brought directly from a cold to a warm location, or is placed in a very damp room, moisture may condense inside the unit. Should this occur, print quality may not be optimum.

Leave the unit turned OFF in a warm, dry room for several hours before using. This will allow the moisture to evaporate.

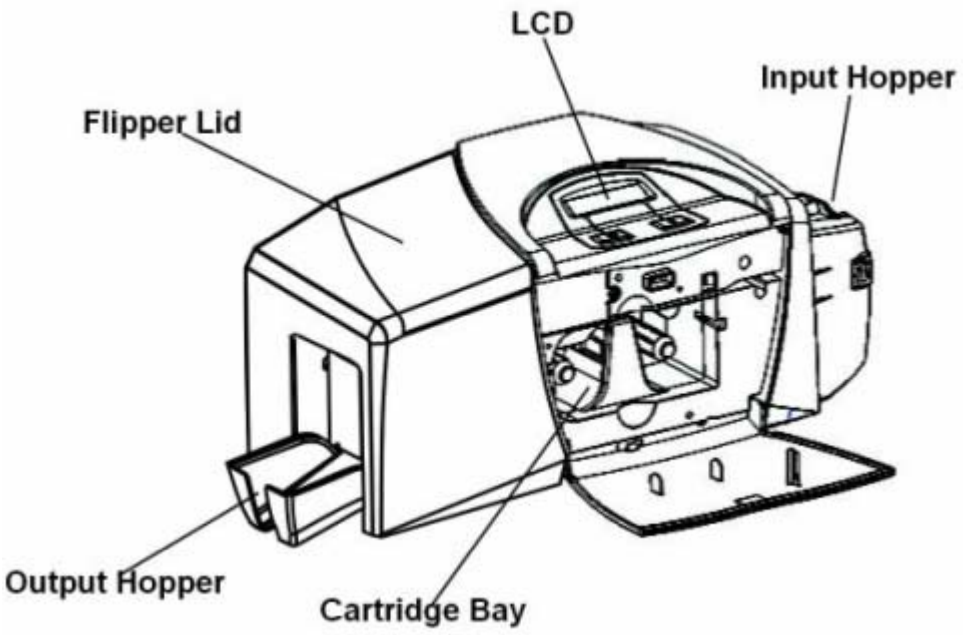
Unpacking and Inspection

While unpacking your Printer, inspect the carton to ensure that no damage has occurred during shipping. Make sure that all supplied accessories are included with your unit.

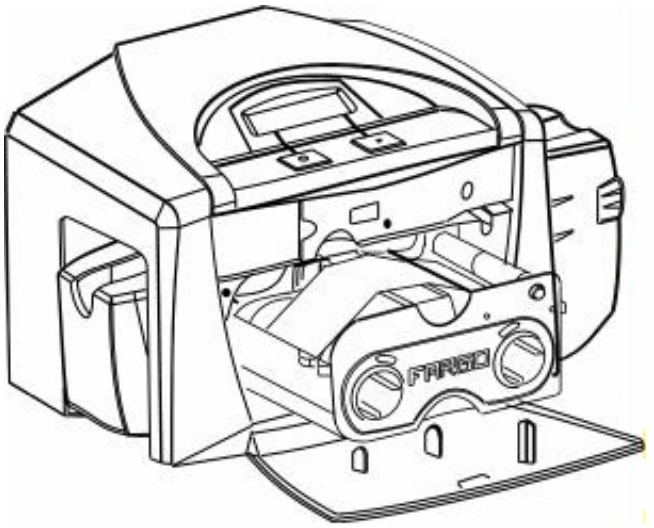
Check that the following items are included:

- Power Supply (**Note:** This product is intended to be supplied by a Listed Power Unit marked "Class 2" and rated for 24 V dc, 2.5 to 5 A.)
- US Power Cable
- Europe Power Cable
- Software Installation CD/User Guide
- User Guide
- Warranty Statement, Registration Card and Compliancy Document

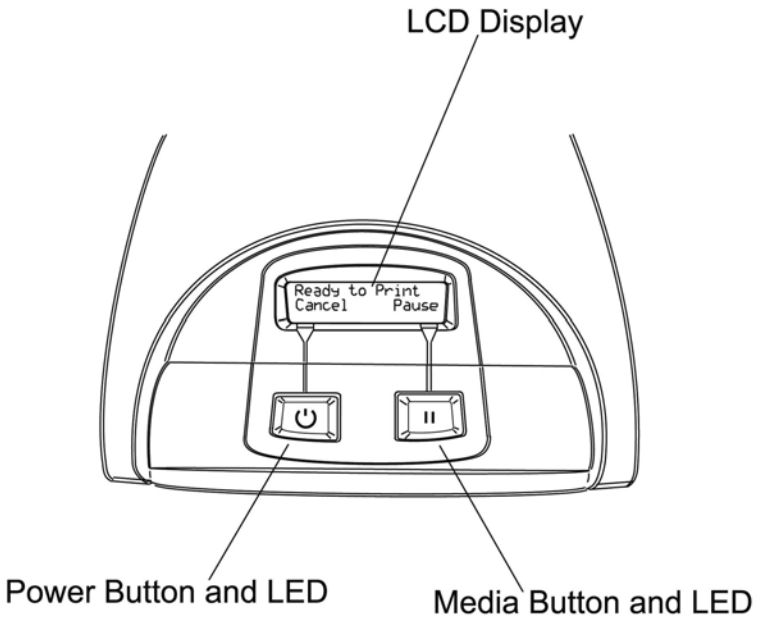
Reviewing the Printer (front view)



Reviewing the Printer (front view; Cartridge being installed)



Reviewing the LCD (top-front part of Printer)

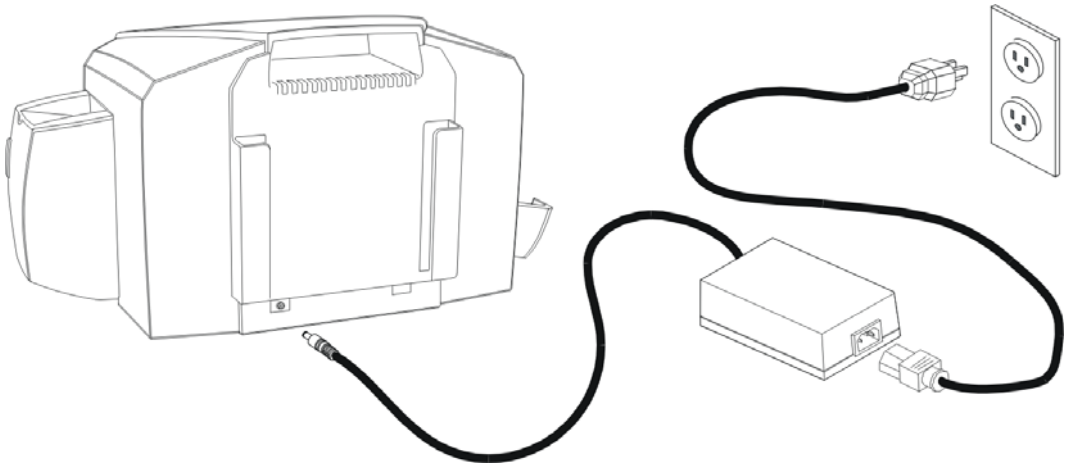


Connecting the Printer power

Follow this procedure. (**Note:** Do not connect the Printer's USB cable until prompted during the Printer Driver installation.)

Step	Procedure
1	Plug the AC adapter power cable into the back of the Printer. See Display A.
2	Plug the wall power cable into the AC power adapter.
3	Plug the wall power cable into a standard 110VAC power outlet.

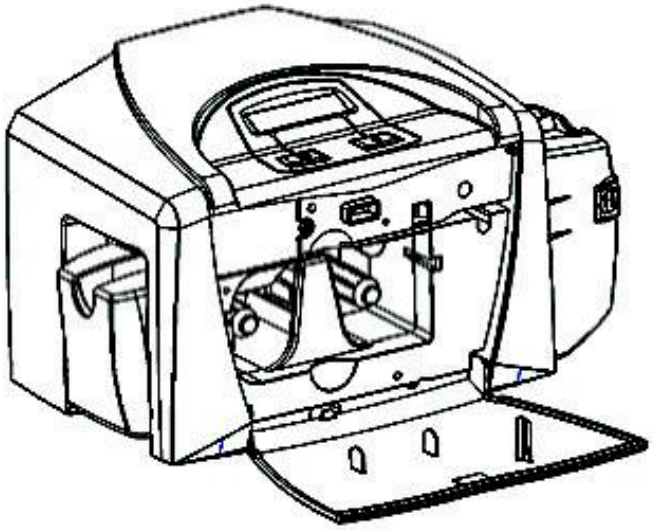
Display A – Shows back of Printer with AC power cable (below).



Installing the Print Ribbon Cartridge

The Fargo DTC400 Card Printer uses a one-piece, disposable Ribbon Cartridge load system. Every full color Ribbon Cartridge contains a 250 “full color card count” Ribbon and a Card Cleaning Roller.

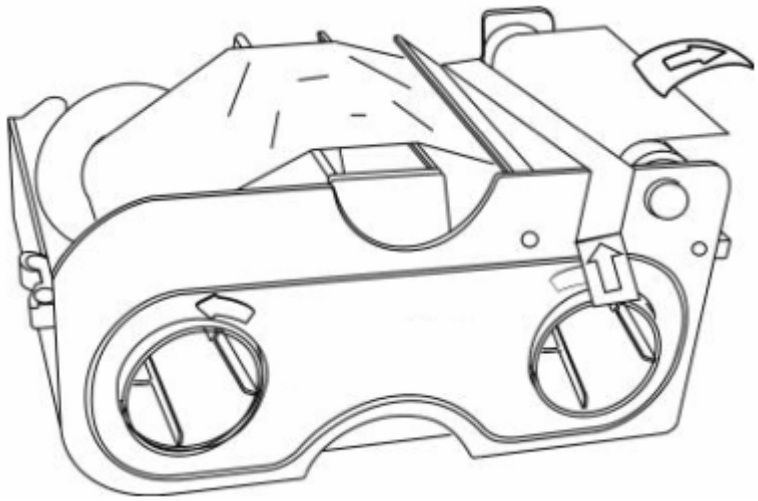
Step	Procedure
1	To install the Ribbon Cartridge, simply open the front Cover by pressing the black rubber pad or touch pad and lowering the Cover down, as shown below.



Installing the Print Ribbon Cartridge (continued)

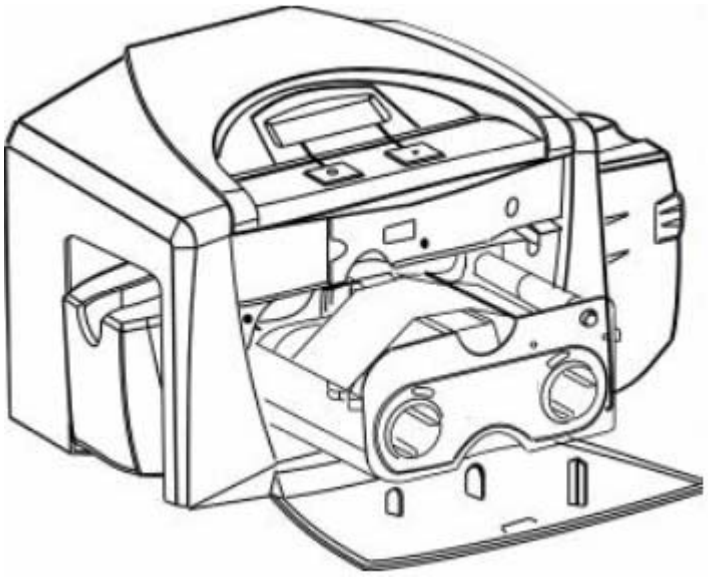
Step	Procedure
2	a. Remove the liner on the Card Cleaning Roller before installing the Cartridge, as shown in Display A (upper right arrow of display). b. Remove the Ribbon securing tape, as shown in Display A (middle right arrow of display).
3	Slide the Ribbon Cartridge into the Printer, as shown in this section.
4	Raise the front Cover and press the front Cover's black rubber pad or touch pad to secure it.

Display A – Shows the Print Ribbon Cartridge before it is installed or inserted into the Printer. The Card Cleaning Roller (see arrow) is already inserted into the Print Ribbon Cartridge.



Installing the Print Ribbon Cartridge (continued)

Display B – Shows direction that Cartridge is inserted in the Printer.



Installing Blank Cards into the Card Hopper

The Fargo DTC400 Printer is capable of printing single load cards and multiple feed cards (batch mode).

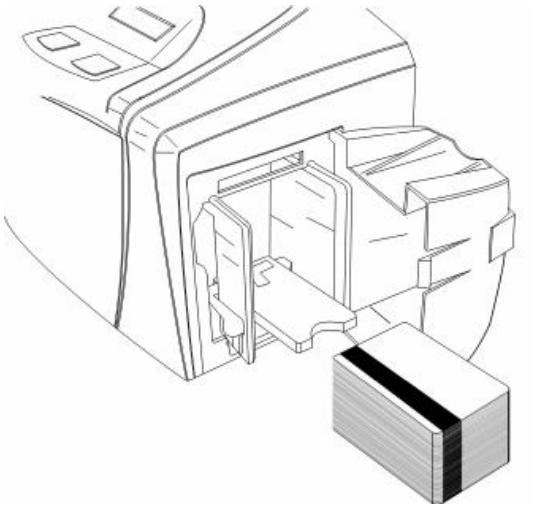
- To print using single feed, simply remove all cards from the Card Hopper, leave the Card Hopper door closed and place a card in the single Feed Card Slot (which can be used repeatedly).
- Again, the cards should be loaded with the print side down and (if applicable) the magnetic strip up and towards the front of the Printer.

To print using Batch mode follow the instructions below.

Step	Procedure
1	Open the Card Hopper Cover.
2	Press the Card Hopper Load Lever down until the Card Tray locks into place, as shown in Display B in this section.
3	Load up to 100 cards into the Hopper with the print side down. If using cards with a magnetic strip, the magnetic strip should be loaded with the strip up and to the front of the Printer, as shown in Display C in this section.
4	Close the Card Hopper Cover to release the Card Tray.

Continued on the next page

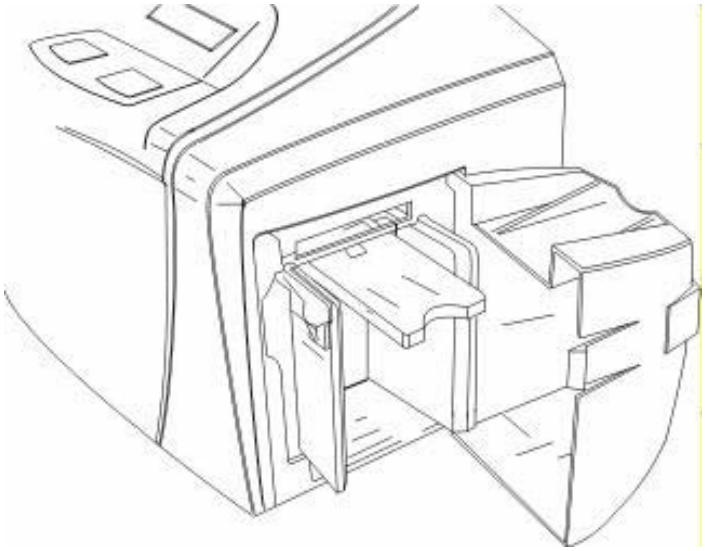
Display A – This is a graphics showing how to insert the cards.



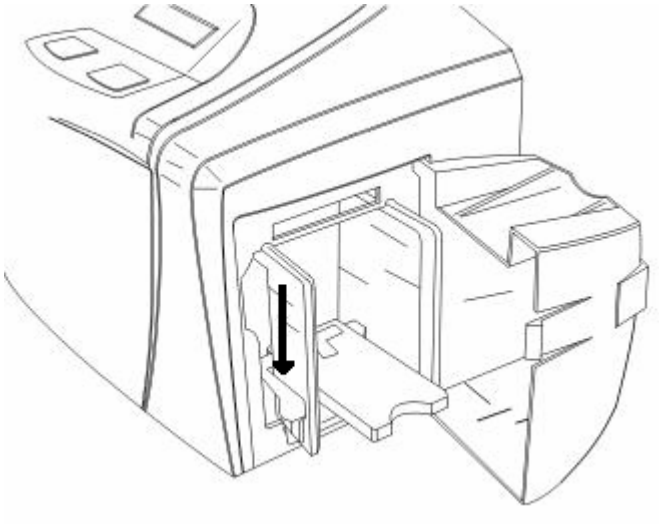
Installing Blank Cards into the Card Hopper (continued)

Display B - Press the Card Hopper Load Lever down. Insert the cards.

Here the Lever is still up.

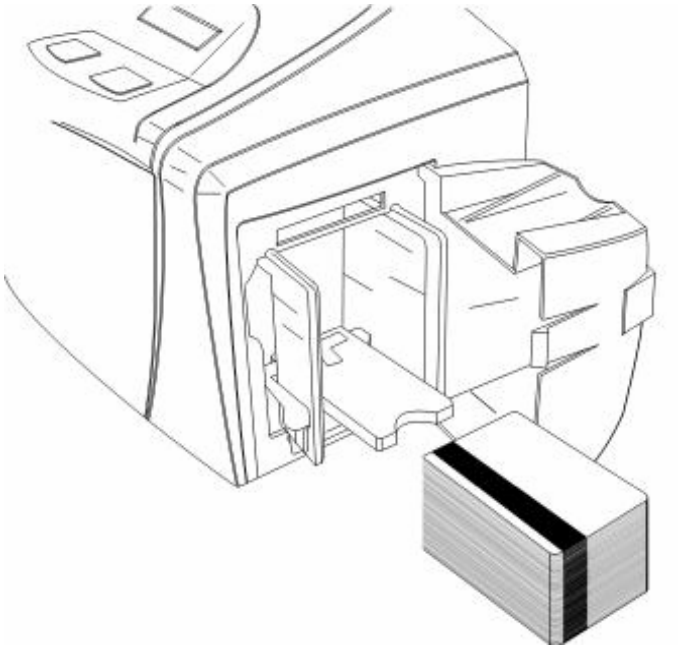


Here the Lever is pressed down.



Installing Blank Cards into the Card Hopper (continued)

Here are the cards ready to insert.



Here the Input Hopper Door is closed.

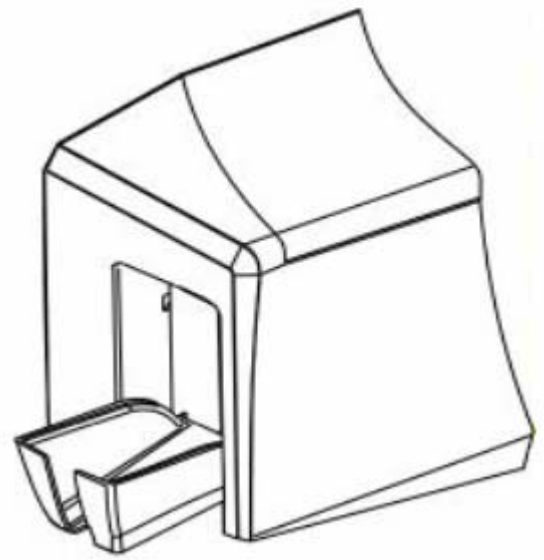
Lowering the Card Output Hopper

Step	Procedure
1	The Fargo DTC400 comes with a Card Output Hopper (to hold cards after they have been printed). Pull on the Output Hopper and lower its Cover down until it snaps into place.

Flipper Table Module Installation

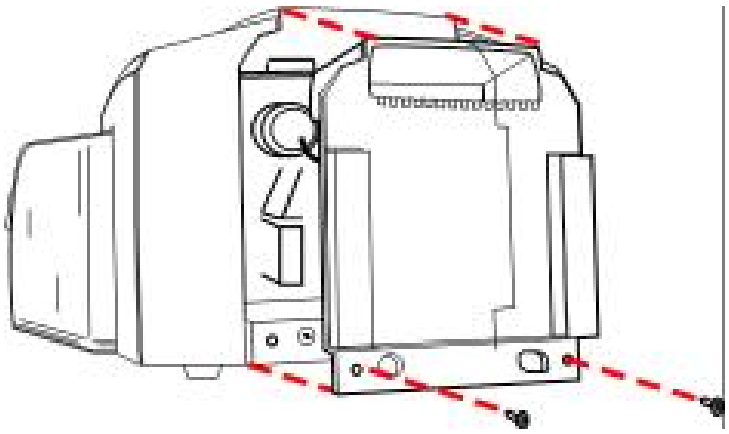
The Flipper Table Module Assembly (D900200) is an automated Flipping Module that allows the Printer to print on the front side and back side of each card.

- See the Installing the Flipper Table Module Assembly (D900200) procedure.
- See the Flipper Table Module Assembly Problems procedures.
- See the **Print Both Sides** option in the Using the Device Options tab (DTC400) section.
- See the **Front** and **Back** radio buttons in the Using the Overlay / Print Area tab (DTC400) section.
- See the **Front** and **Back** radio buttons in the Using the K Panel Resin tab (DTC400) section.
- See the DTC400 Card Printer Service Manual for the replacement procedures for this Printer.



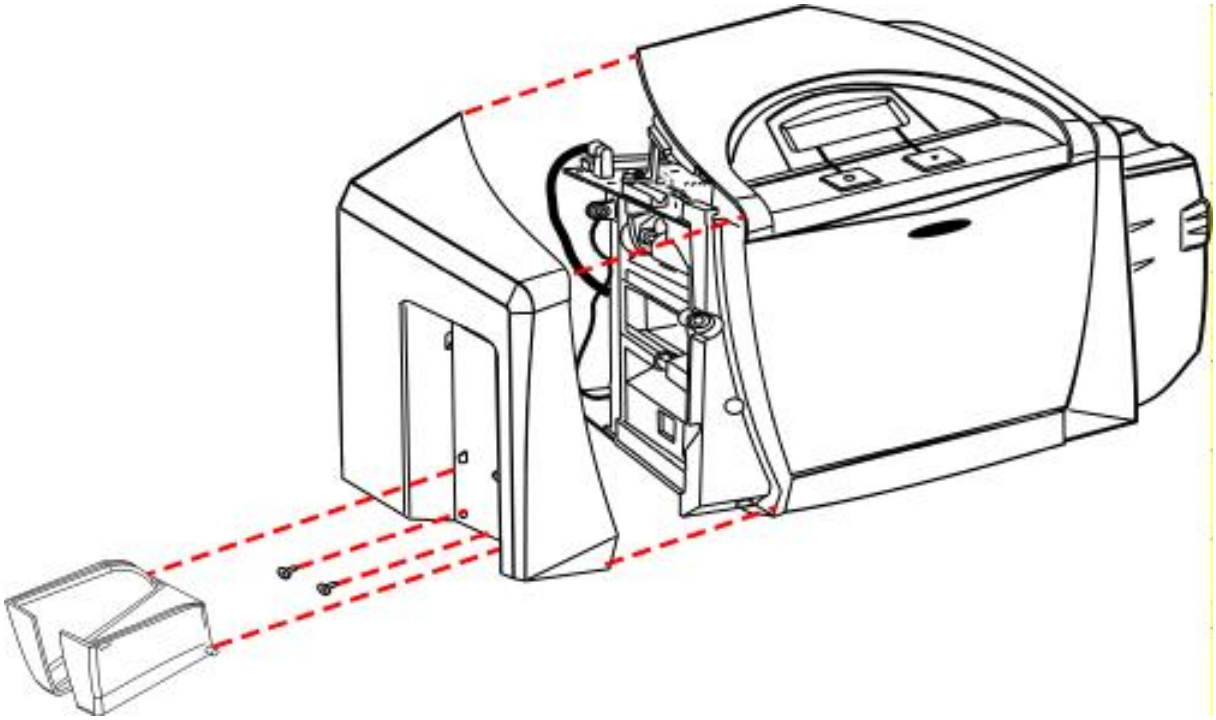
Installing the Flipper Table Module Assembly (D900200)

Step	Description
1	**Caution:** Turn off the Printer and unplug the power cord from the Printer.
2	Remove the Rear Cover (D90066) to the Printer.



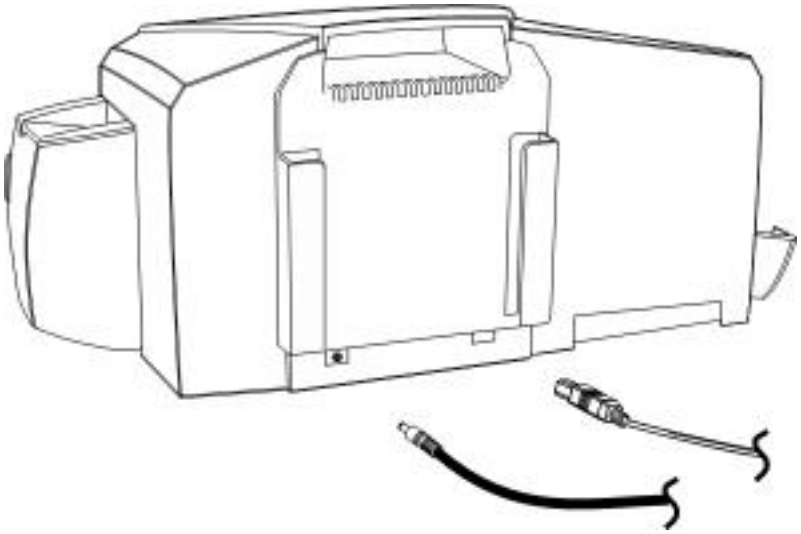
Installing the Flipper Table Module Assembly (D900200) (continued)

Step	Description
3	Remove the Card Output or Exit Door (D900092) and Left End Cap (D900064) to the Printer, as shown below.



Installing the Flipper Table Module Assembly (D900200) (continued)

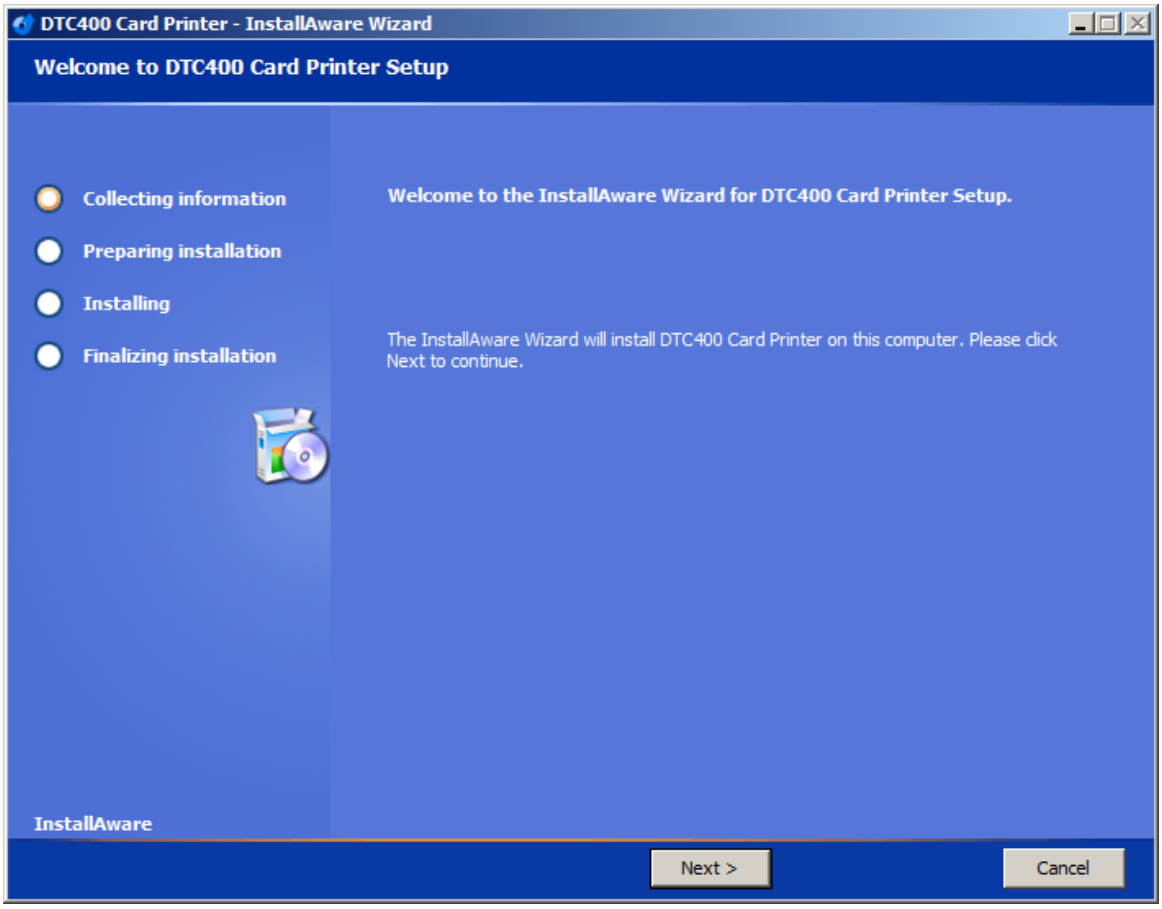
Step	Description
4	a. Remove the Cover from the Flipper Table Module Assembly (D900200), as shown below. b. Place the Flipper Table next to Printer, as shown below.
5	Connect the Flipper Table Module cable, as shown below.
6	Slide in the Flipper Table Module pins, as shown below.
7	Attach the Flipper Table Module pin screw, as shown below.
8	Use the Torx T-10 screwdriver to attach the one (1) front Base plate mount screws (F000170), as shown below.
9	Attach the Flipper Table Module Cover, as shown below.
10	Connect the USB and Power cables, as shown below.



Printer Driver Installation

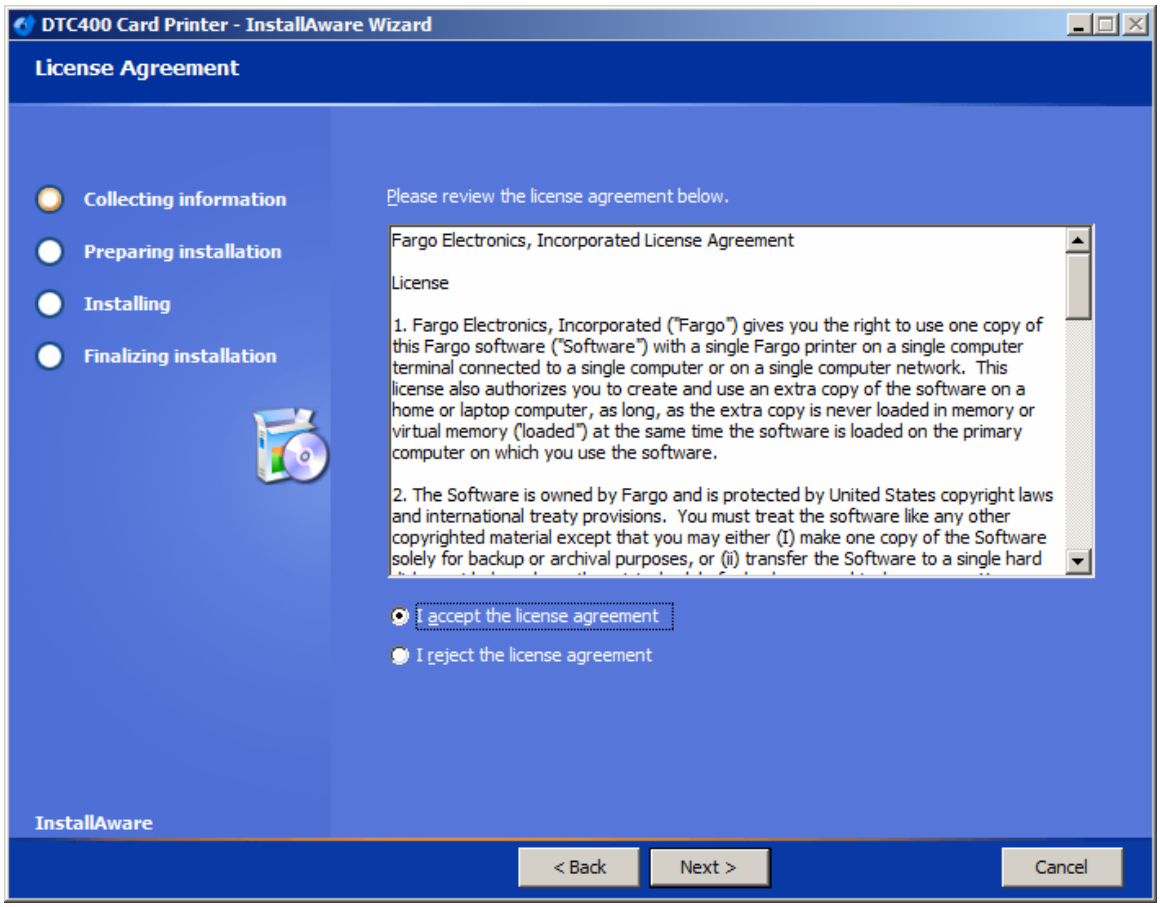
Installing the DTC400 Printer Driver

Step	Procedure
1	Close down all programs and insert the Software Installation CD into your computer's CD drive. After a few seconds, the CD's installer program will automatically open. Follow the CD's on-screen Procedures to complete installation. (**Note:** If the CD does not automatically open, use "My Computer" or "Windows Explorer" to view the contents of the CD. Then, double-click on the Setup.exe file listed on the CD.) See below.
2	Click on the **Next** button to continue with the installation.


DTC400 Card Printer - InstallAware Wizard
Welcome to DTC400 Card Printer Setup
Collecting information
Preparing installation
Installing
Finalizing installation
Welcome to the InstallAware Wizard for DTC400 Card Printer Setup.
The InstallAware Wizard will install DTC400 Card Printer on this computer. Please click Next to continue.
InstallAware
Next >
Cancel

Installing the DTC400 Printer Driver (continued)

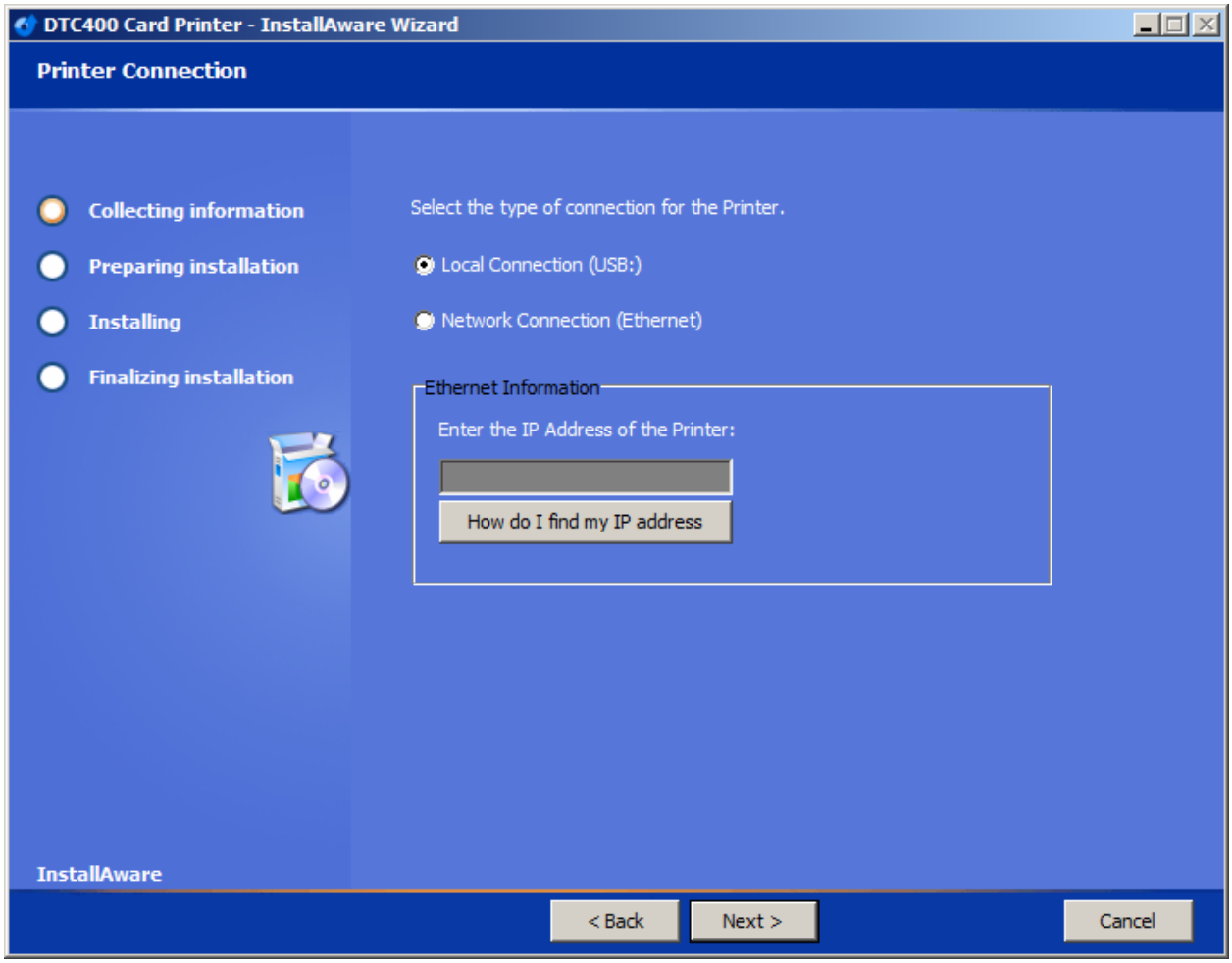
Step	Procedure
3	Read the License Agreement. Select **I accept the terms of the license agreement**. Click **Next** to continue with the installation.


DTC400 Card Printer - InstallAware Wizard
License Agreement
Collecting information
Preparing installation
Installing
Finalizing installation
Please review the license agreement below.
Fargo Electronics, Incorporated License Agreement
License
1. Fargo Electronics, Incorporated ("Fargo") gives you the right to use one copy of this Fargo software ("Software") with a single Fargo printer on a single computer terminal connected to a single computer or on a single computer network. This license also authorizes you to create and use an extra copy of the software on a home or laptop computer, as long, as the extra copy is never loaded in memory or virtual memory ("loaded") at the same time the software is loaded on the primary computer on which you use the software.
2. The Software is owned by Fargo and is protected by United States copyright laws and international treaty provisions. You must treat the software like any other copyrighted material except that you may either (I) make one copy of the Software solely for backup or archival purposes, or (ii) transfer the Software to a single hard
I accept the license agreement
I reject the license agreement
InstallAware
< Back
Next >
Cancel

Installing the DTC400 Printer Driver (continued)

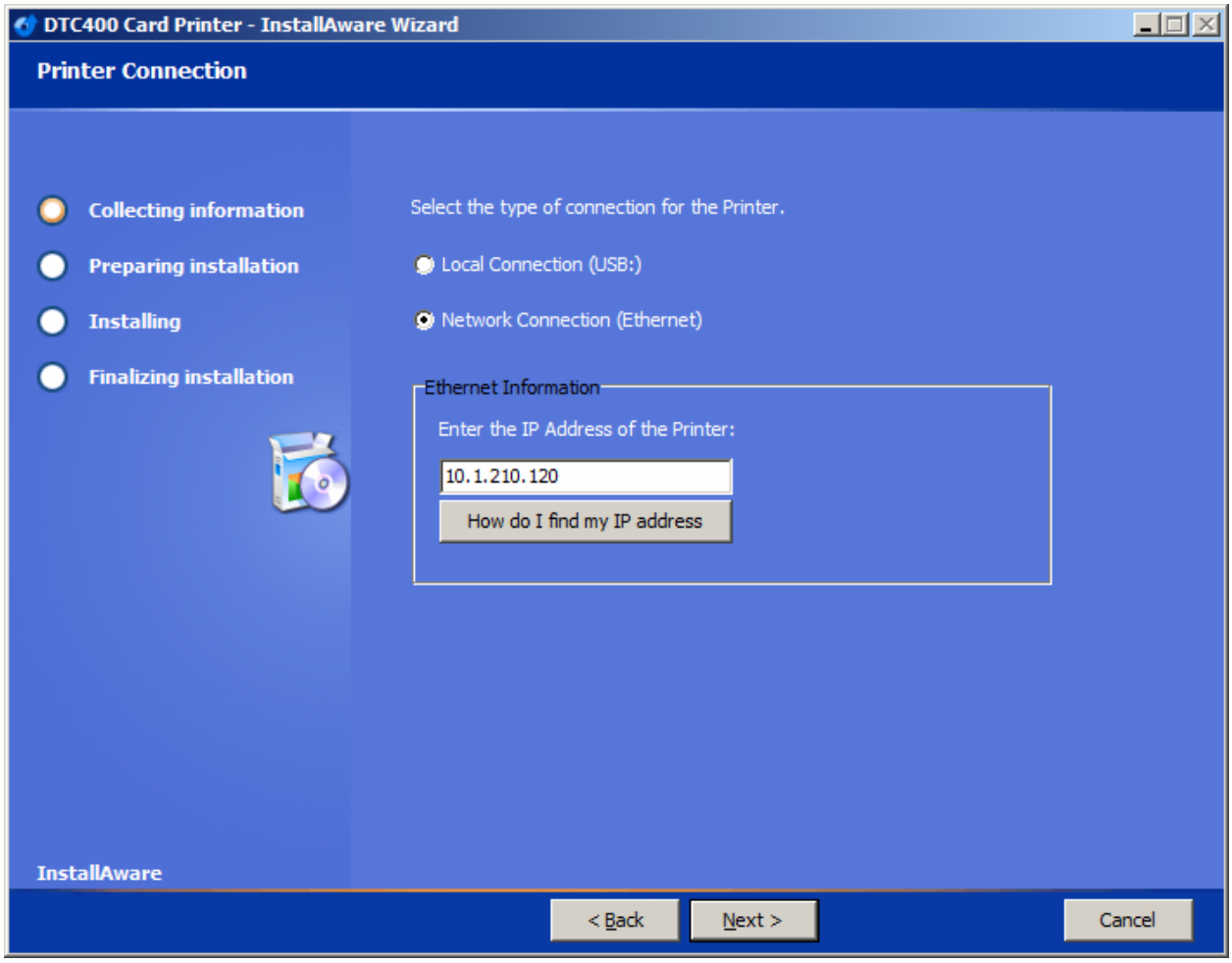
Step	Procedure
4	If installing a USB Printer, select the Local Connection (USB) radio button. See Display A (below). **OR** If installing an Ethernet Printer, select the Network Connection (Ethernet) radio button. Enter the IP address of the Printer. See Display B (below). See Accessing the DTC400 IP address.
5	Click **Next** to continue.

Display A - Local Connection (USB) radio button



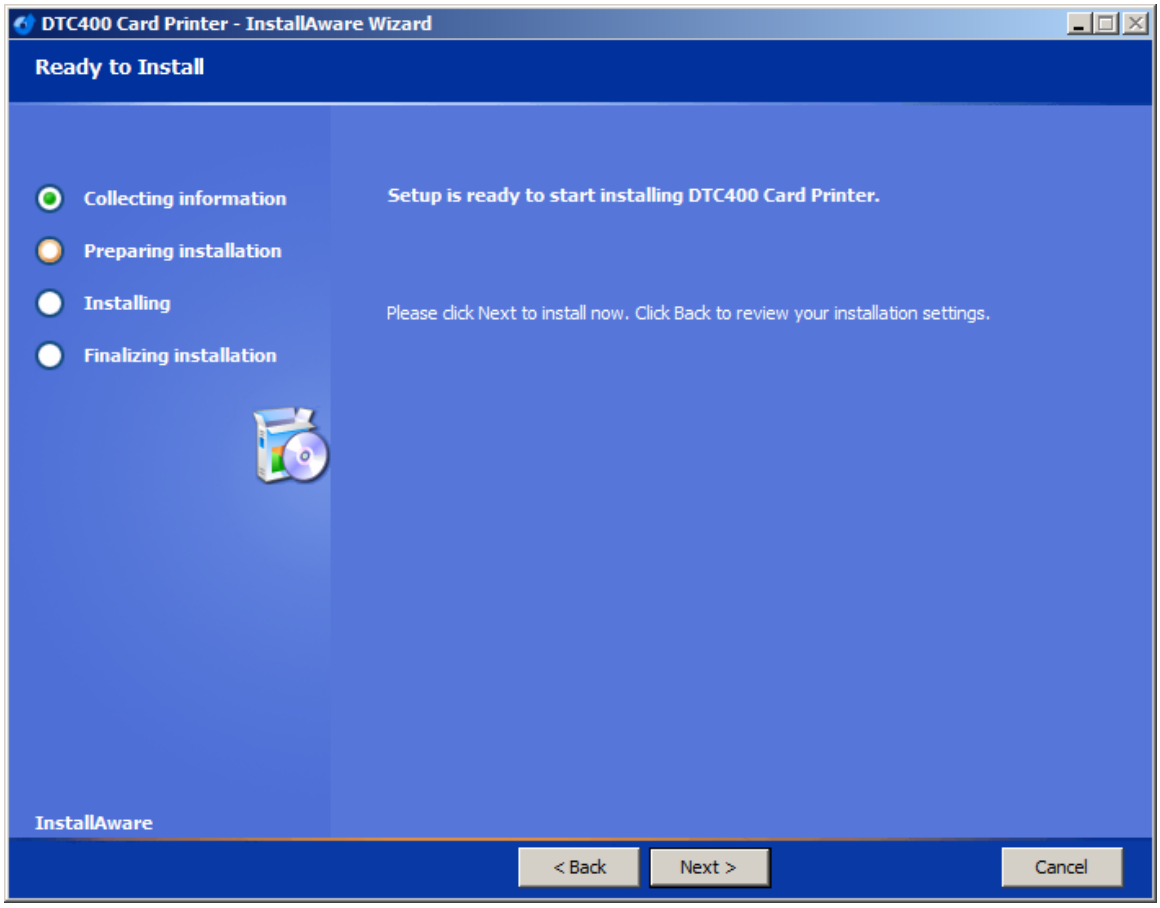
Installing the DTC400 Printer Driver (continued)

Display B - Network Connection (Ethernet) radio button



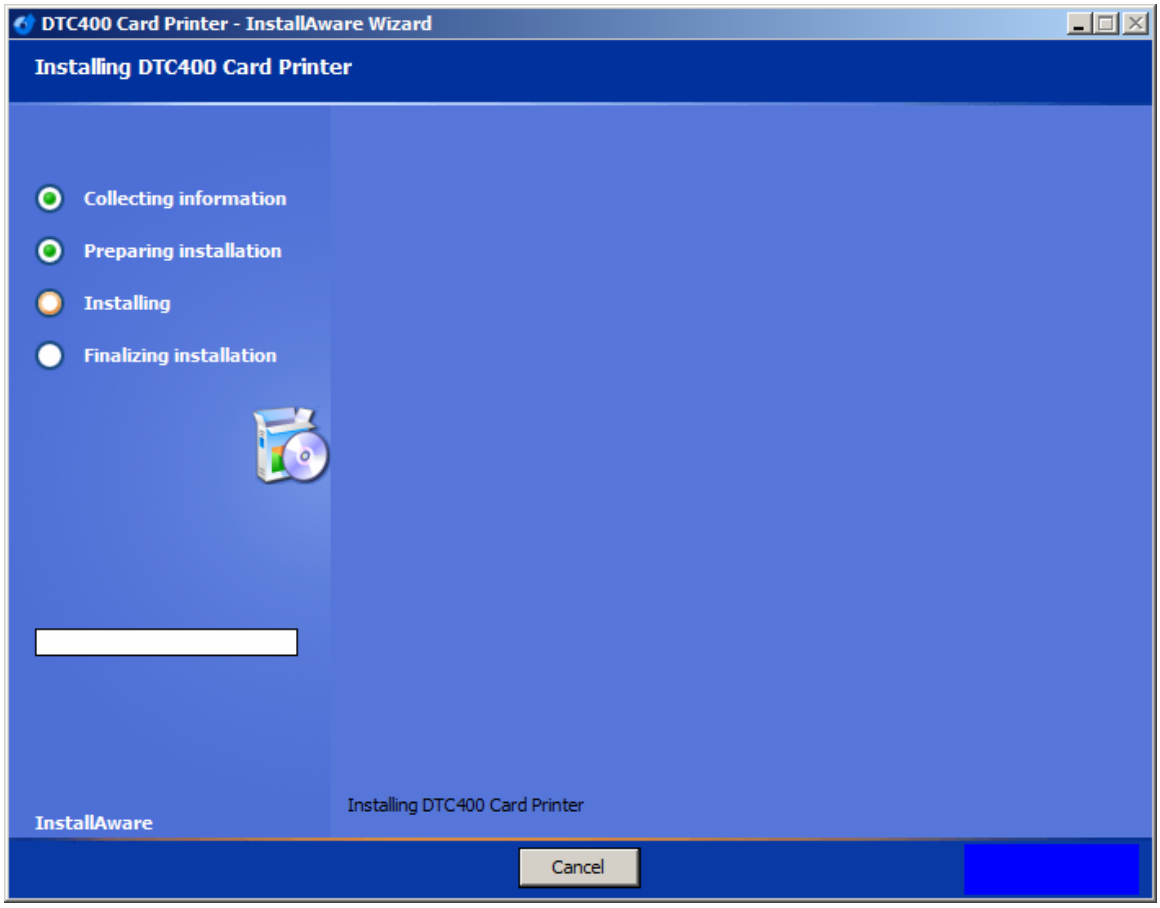
Installing the DTC400 Printer Driver (continued)

Step	Procedure
6	Click **Next** to continue.


DTC400 Card Printer - InstallAware Wizard
Ready to Install
Collecting information
Preparing installation
Installing
Finalizing installation
Setup is ready to start installing DTC400 Card Printer.
Please click Next to install now. Click Back to review your installation settings.
InstallAware
< Back
Next >
Cancel

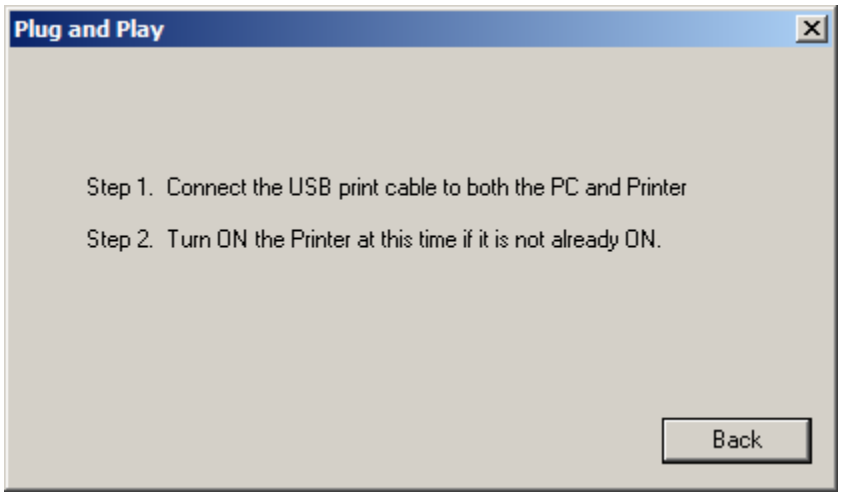
Installing the DTC400 Printer Driver (continued)

Step	Procedure
7	Wait during the installation.



Installing the DTC400 Printer Driver (continued)

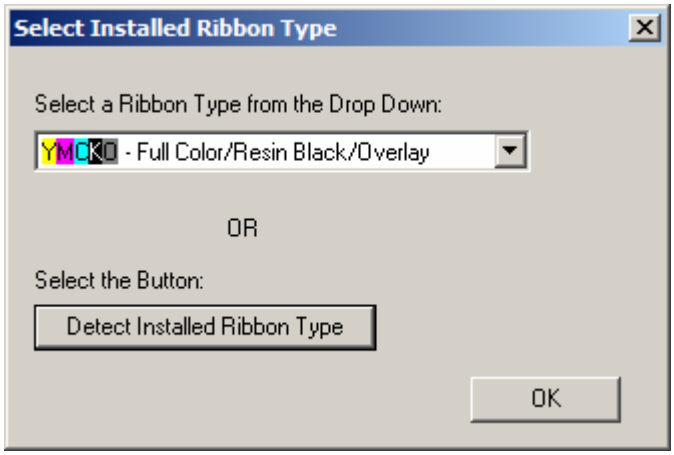
Step	Procedure
8	This step only applies if you are installing a USB Printer. a. Connect the USB cable to the Printer. b. Turn ON the Printer at this time if it is not already ON. c. Wait during the installation.


Plug and Play
Step 1. Connect the USB print cable to both the PC and Printer
Step 2. Turn ON the Printer at this time if it is not already ON.
Back

Installing the DTC400 Printer Driver (continued)

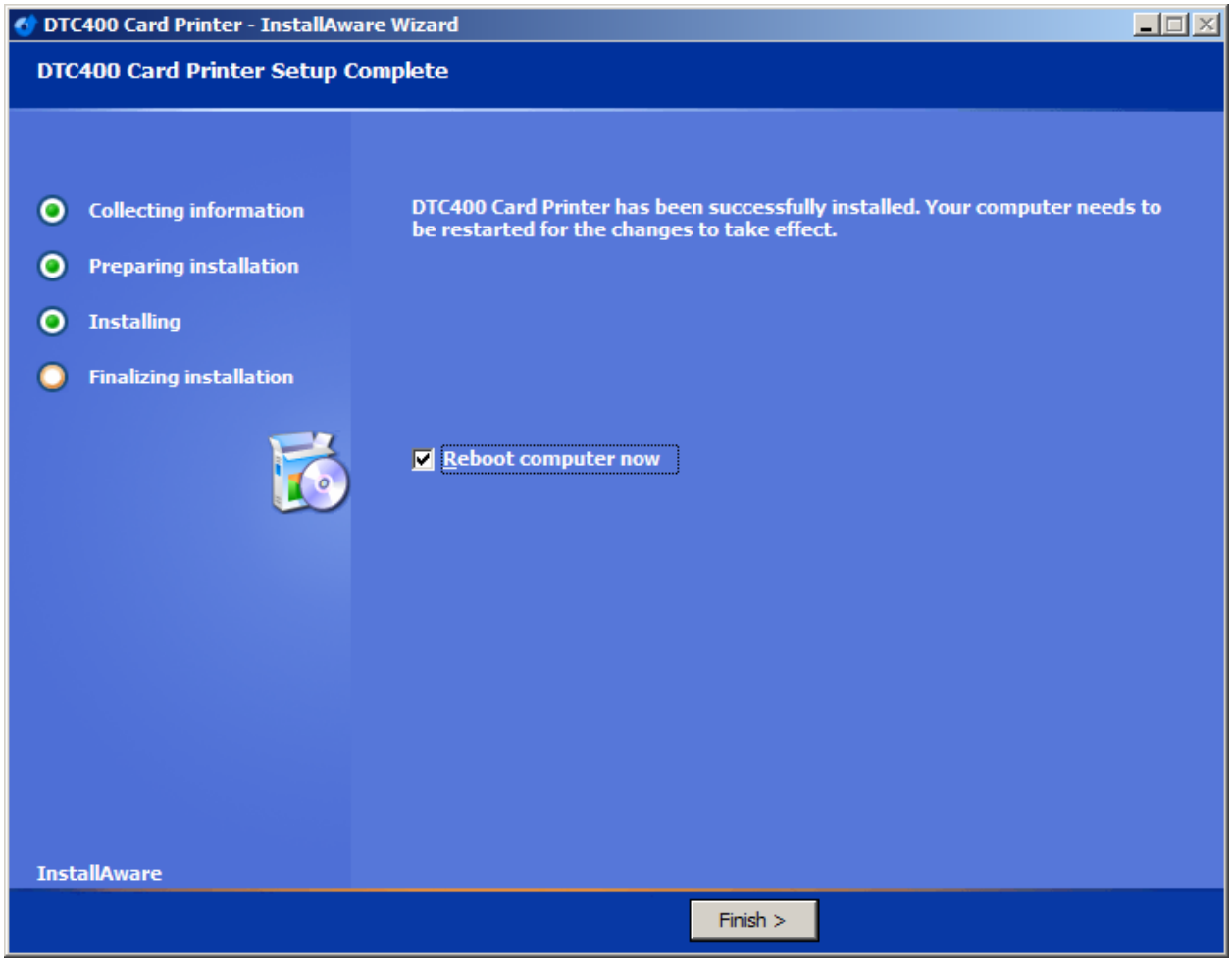
Step	Procedure
9	Select the Ribbon Type from the dropdown menu. See Display A under this procedural step.

Display A – Ribbon Type dropdown menu



Installing the DTC400 Printer Driver (continued)

Step	Procedure
10	Click the **Finish** button to complete the Installware Wizard.
11	You have completed this procedure.

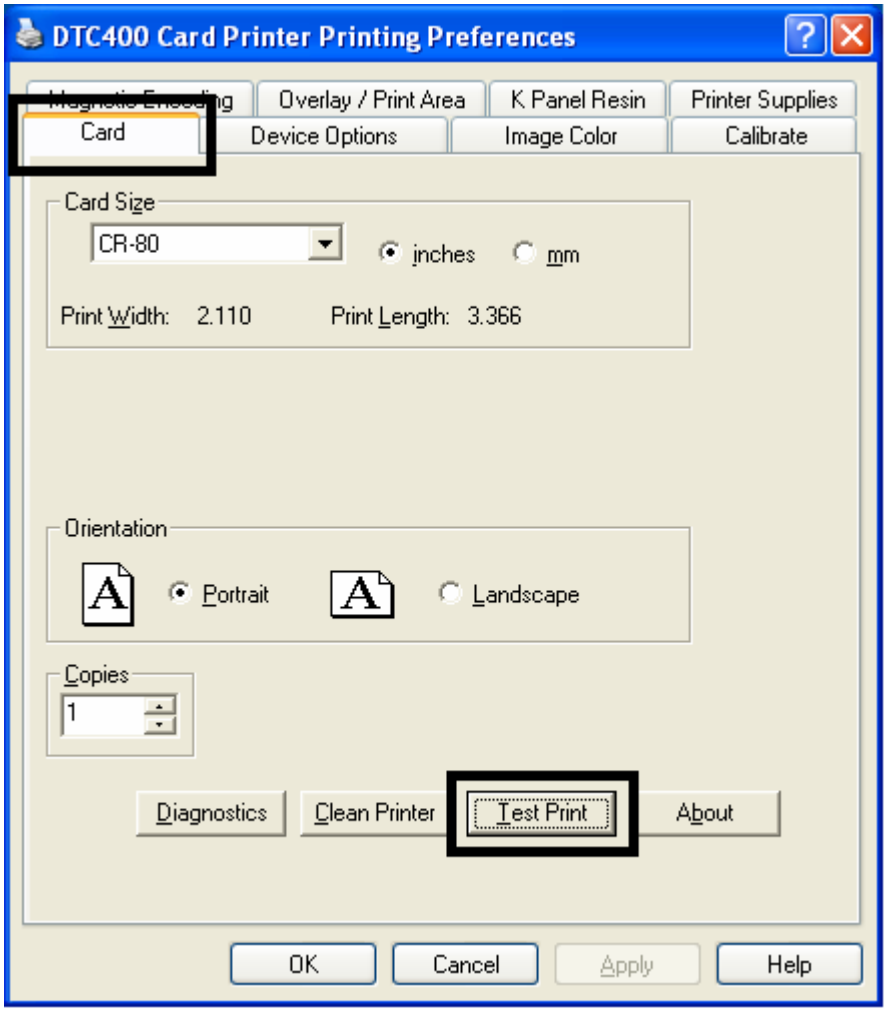

DTC400 Card Printer - InstallAware Wizard
DTC400 Card Printer Setup Complete
Collecting information
Preparing installation
Installing
Finalizing installation
DTC400 Card Printer has been successfully installed. Your computer needs to be restarted for the changes to take effect.
Reboot computer now
InstallAware
Finish >

Printing a Test Print Image

Step	Procedure
1	a. From your computer's startup menu, select Settings > Printers and Faxes (Windows XP). b. Double click on the DTC400 Card Printer under the Printers window. c. Select **Printing Preferences** under the Printer drop-down menu. This will bring up the DTC400 Printing Preferences window.
2	a. Select the Card tab, then click on the **Test Print** button, as shown on the next page. (**Note:** Ensure that the Ribbon is installed before proceeding. The correct Ribbon type is selected in the Device Options tab.) b. When the **Test Print** button is selected, an image is copied to the Printer.
3	This completes the DTC400 Card Printer/Encoder installation procedure.

Printing a Test Print Image (continued)

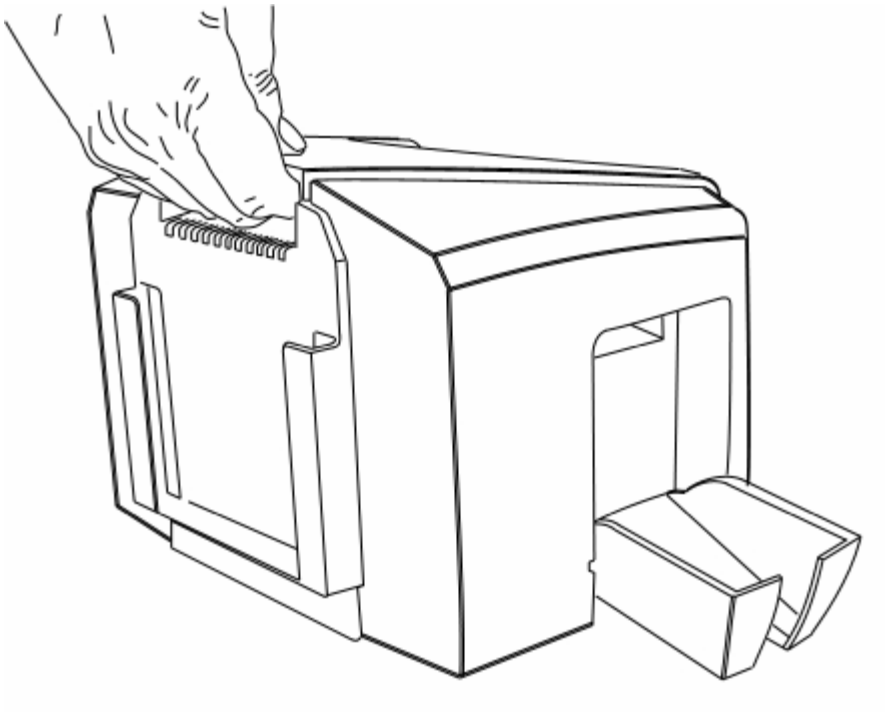
Display A – DTC400 Printer Driver Card Tab:



Printer Transport

Moving the Printer to another location

Step	Procedure
1	The Printer can be transported by gripping it under the back lid, as shown in the photo below.
2	**You have completed the setup and installation procedures in this section.**



Section 4: General Troubleshooting

This section provides Troubleshooting procedures for this Printer for Communication Errors, Card Feed Errors, Print Process Errors, Card Jam Errors, Encoding Errors and Diagnosing Image Problems.

Safety Messages (review carefully)

Symbol	Critical Instructions for Safety purposes
Danger:	**Failure to follow these installation guidelines can result in death or serious injury.** Information that raises potential safety issues is indicated by a warning symbol (as shown to the left). • **To prevent personal injury**, refer to the following safety messages before performing an operation preceded by this symbol. • **To prevent personal injury**, always remove the power cord prior to performing repair procedures, unless otherwise specified. • **To prevent personal injury**, make sure only qualified personnel perform these procedures.
Caution:	**This device is electro statically sensitive. It may be damaged if exposed to static electricity discharges.** Information that raises potential electrostatic safety issues is indicated by a warning symbol (as shown to the left). • **To prevent equipment or media damage**, refer to the following safety messages before performing an operation preceded by this symbol. • **To prevent equipment or media damage**, observe all established Electrostatic Discharge (ESD) procedures while handling cables in or near the Circuit Board and Printhead Assemblies. • **To prevent equipment or media damage**, always wear an appropriate personal grounding device (e.g., a high quality wrist strap grounded to avoid potential damage). • **To prevent equipment or media damage**, always remove the Ribbon and Cards from the Printer before making any repairs, unless otherwise specified. • **To prevent equipment or media damage**, take jewelry off of fingers and hands, as well as thoroughly clean hands to remove oil and debris before working on the Printer.

Communications Errors

Resolving the Communication Errors

Symptom(s): Incorrect output, communications error on PC or Printer, stalling, no response from Printer, no job printed, and “paper out” error.

Step	Procedure
1	Confirm that the system meets the minimum requirements, as shown here: • IBM-PC or compatible. • Windows 2000 or Windows XP: 500 MHz computer with 256 MB of RAM or higher • 500 MB free hard disk space or higher • USB Port
2	Confirm the correct installation of the Printer Driver. a. Close the software program and check the Printer Driver. b. Reboot the computer. c. Ensure the Printer Driver is installed correctly. (**Note:** Especially if an obsolete Driver was recently removed.) d. Ensure the correct setup options within the Printer Driver are selected. e. Confirm that the Driver is current by checking at: www.fargo.com
3	Confirm the correct installation of the Flipper Table Module Assembly. a. Reboot the computer. b. Ensure that the **Print Both Sides** option in the Printer Driver is set correctly. c. Verify the Flipper Table Module Assembly is functioning properly by printing out cards in a test run. d. If you are experiencing problems, see Resolving the No Flipper Table Module problem.

Resolving the Communication Errors (continued)

Step	Procedure
4	Determine the problem with printing from the application. a. Print a self-test from the Printer by holding down the **Pause** button on power up to ensure that the Printer (itself) is functioning properly. b. Print the Windows test page that is located in the General tab of the Driver. c. Use **WordPad** (a Windows word processing program in the Accessories Program Group). 1) Go to the **File** menu and select **Page Setup**. 2) Click on the **Printer** button and select the DTC400 Card Printer. 3) Click **OK** and reset all four margins to zero. (**Note:** The WordPad will automatically replace the values with its minimum margins.) 4) Open the program and type: “This is a Test.” then, go to **File** on the menu bar and select **Print**.
5	Determine whether there is adequate hard Drive space. (**Note:** A large volume of temporary files on the computer can cause communications errors.) a. Access the temporary files by following this process: • Search for all folders called TEMP. Once found, clear out the contents of the folders. • Use a disk cleanup utility (such as **Disk Cleanup** found in the System Tools folder of the Start menu) or use a third party application.

Print Process Errors

All Troubleshooting procedures assume that only factory-authorized supplies are in use in the Printer.

Resolving a Card Not Fed Error (Cards will not feed off the Hopper)

Step	Procedure
1	Review the following information. • **Symptom:** Cards will not feed at all. • **Printer Error State:** Card is not being detected by the Card TOF Sensor 11 seconds after the initiation of a print job causing the Printer to produce an error • **LCD Error Display:** Card Not Fed • **Driver Monitor Error Display:** Unable to Feed Card

Unable to Feed Card
The Printer is unable to feed a card from the Input Hopper.
Ensure that cards are available and loaded correctly and press the Resume button
14
OK
Cancel Print
Help

Resolving a Card Not Fed Error (Cards will not feed off the Hopper) (cont.)

Step	Procedure
2	Check the card quality / loading. a. Remove cards from the Card Hopper. b. Ensure that the cards are not sticking together by fanning them out and then lining them back together in straight deck. c. Press the Card Hopper Load Lever down until the Card Tray locks into place. d. Load up to 100 cards into the Hopper with the print side down. e. Close the Card Hopper Cover to release the Card Tray. f. Press on the **Resume** button. g. If the cards do not feed, continue to Step 3.
3	Press the **Cancel Print** button on the Driver Monitor Error Display Message.
4	Reboot the Printer by cycling the power.
5	Check the Card Feed Motor. a. Remove all cards from the Hopper. b. Press the Card Hopper Load Lever down until the Card Tray locks into place. c. Using the Fargo Workbench Printer Utility, send a test print to the Printer. See Fargo Workbench Printer Utility. d. Gently touch the Card Hopper Feed Roller to verify that it is turning e. If the Roller is NOT turning, continue to Step 7. f. If the Roller is turning, continue to Step 6.
6	Check Hopper Tray Spring Tension. a. Open Card Hopper Cover. b. Using the Fargo Workbench Printer Utility, send a test print to the Printer. See Fargo Workbench Printer Utility. c. When the Card Hopper Feed Roller engages, push up on the Card Hopper Tray. g. If the cards feed, replace the Card Hopper Lift Spring. d. If the cards do not feed, replace the Card Hopper Feed Roller.

Resolving a Card Not Fed Error (Cards will not feed off the Hopper)

Step	Procedure
7	Card Hopper Feed Roller is not turning during a print job. a. Remove the Printer rear cover. b. Ensure that the Card Hopper Feed Motor power cable is securely connected to J-20 on the Printers Main Board. c. Ensure that the Card Hopper Feed Motor power cable is securely connected to the Card Hopper Feed Motor. d. Using the Fargo Workbench Printer Utility, send a test print to the Printer. See Fargo Workbench Printer Utility. e. If the Card Hopper Feed Motor is not moving, continue to Step 8.
8	Replace Card Hopper Feed Motor. a. Replace the Card Hopper Feed Motor. b. Using the Fargo Workbench Printer Utility, send a test print to the Printer. See Fargo Workbench Printer Utility. c. If the Card Hopper Feed Motor does not turn, replace the Main Board.

Resolving a Card Not Fed Error (Two (2) or more card feed at the same time)

All Troubleshooting procedures assume that only factory-authorized supplies are in use in the Printer.

Step	Procedure
1	Review the following information. • **Symptoms:** Two or more cards feed at the same time causing the cards to jam at the Card Hopper Roller. Printer is out of cards. • **Printer Error State:** Card is not being detected by card TOF Sensor 11 sec after the initiation of a print job causing the Printer to produce an error • **LCD Error Display:** Card Not Fed • **Driver Monitor Error Display:** Unable to Feed Card

Unable to Feed Card
The Printer is unable to feed a card from the Input Hopper.
Ensure that cards are available and loaded correctly and press the Resume button
14
OK
Cancel Print
Help

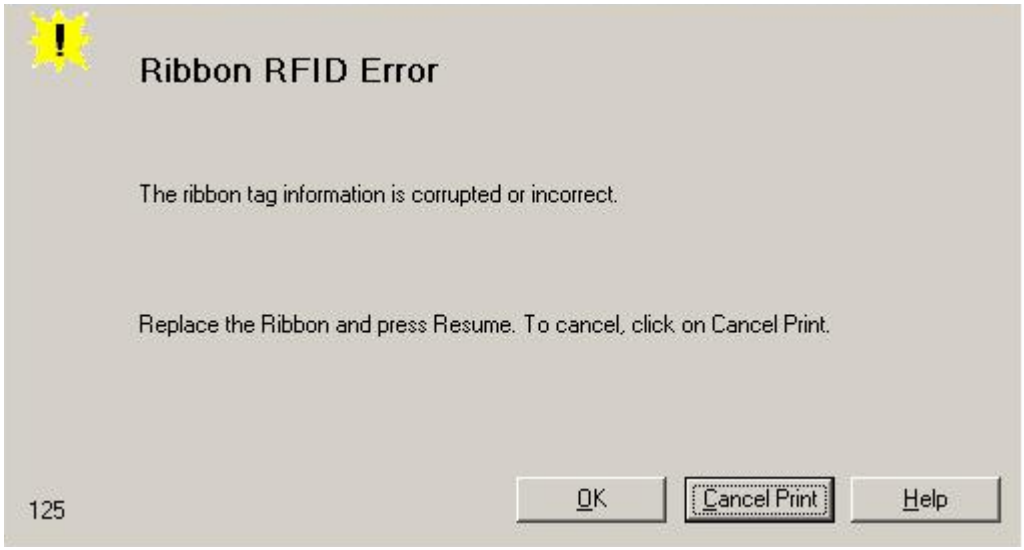
Resolving a Card Not Fed Error (Two (2) or more card feed at the same time) (cont.)

Step	Procedure
2	Check card quality / loading. a. Remove cards from the Card Hopper. b. Ensure that the cards are not sticking together by fanning them out and then lining them back together in straight deck. c. Press the Card Hopper Load Lever down until the Card Tray locks into place. d. Load up to 100 cards into the Hopper with the print side down. e. Close the Card Hopper Cover to release the Card Tray. f. Press on the **Resume** button. g. If the cards do not feed, continue to Step 3.
3	Press the **Cancel Print** button on the Driver Monitor Error Display Message.
4	Reboot the Printer by cycling the power.
5	Check Card Feed TOF Sensor. a. Remove the Printers rear cover. b. Use a digital volt meter to place the Positive lead to pin 9 of the J-4 Main Board connection and the negative lead to pin 12 of the J-4 Main Board connection. • The blocked Sensor should read +4.99 vdc. • The open Sensor should read +1.5 vdc. c. If the Card Feed TOF Sensor does not read properly, replace the Sensor.
6	Clean the Card Feed Roller.

Resolving a Ribbon RFID Error (Ribbon RFID Antenna is Corrupted)

All Troubleshooting procedures assume that only factory-authorized supplies are in use in the Printer.

Step	Procedure
1	Review the following information. • **Symptom:** Printer RFID Sensor does not detect a recognizable signal from the Ribbon. • **Printer Error State:** The Ribbon tag information is corrupted or incorrect. • **LCD Error Display:** Ribbon RFID Error • **Driver Monitor Error Display:** Ribbon RFID Error


Ribbon RFID Error
The ribbon tag information is corrupted or incorrect.
Replace the Ribbon and press Resume. To cancel, click on Cancel Print.
125
OK
Cancel Print
Help

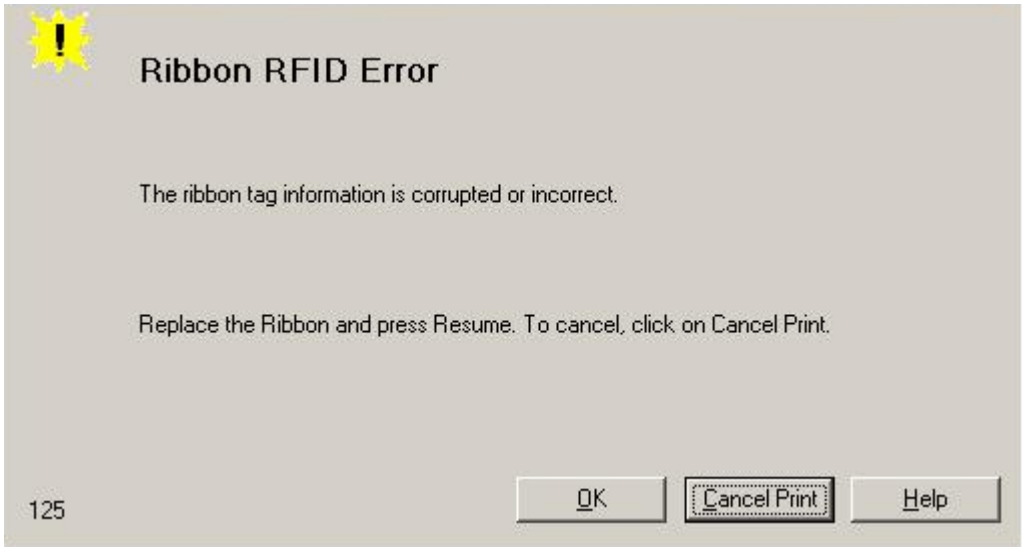
Resolving a Ribbon RFID Error (Ribbon RFID Antenna is Corrupted) (cont.)

Step	Procedure
2	Replace the Print Ribbon a. Replace the Print Ribbon Cartridge. b. Press on the **Resume** button. c. If the error continues, see Resolving the Ribbon RFID Error (Ribbon RFID Sensor is Corrupted) in this section.

Resolving a Ribbon RFID Error (Ribbon RFID Sensor is Corrupted)

All Troubleshooting procedures assume that only factory-authorized supplies are in use in the Printer.

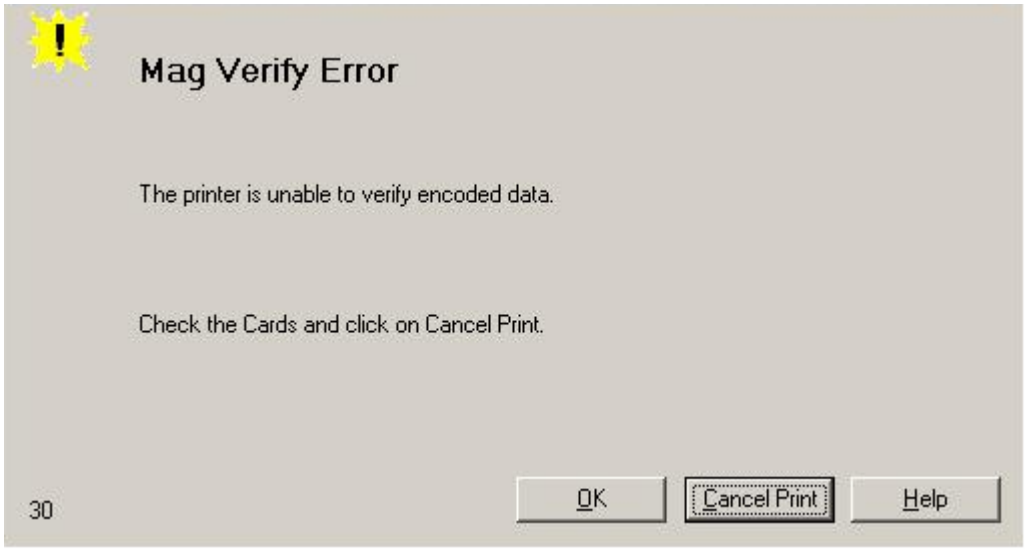
Step	Procedure
1	Review the following information. • **Symptom:** Printer RFID Sensor does not detect a recognizable signal from the Ribbon. • **Printer Error State:** The Ribbon tag information is corrupted or incorrect. • **LCD Error Display:** Ribbon RFID Error • **Driver Monitor Error Display:** Ribbon RFID Error
2	Replace the Print Ribbon RFID Sensor. a. Replace the Print Ribbon RFID Sensor. b. Press on the **Resume** button. c. If the error continues, replace the Printer Main Board.


Ribbon RFID Error
The ribbon tag information is corrupted or incorrect.
Replace the Ribbon and press Resume. To cancel, click on Cancel Print.
125
OK
Cancel Print
Help

Resolving the Mag Verify Error

All Troubleshooting procedures assume that only factory-authorized supplies are in use in the Printer.

Step	Procedure
1	Review the following information. • **Symptom:** The Printer is unable to verify encoded data. • **Printer Error State:** The Printer is unable to verify encoded data. • **LCD Error Display**: Mag Verify • **Driver Monitor Error Display**: Mag Verify

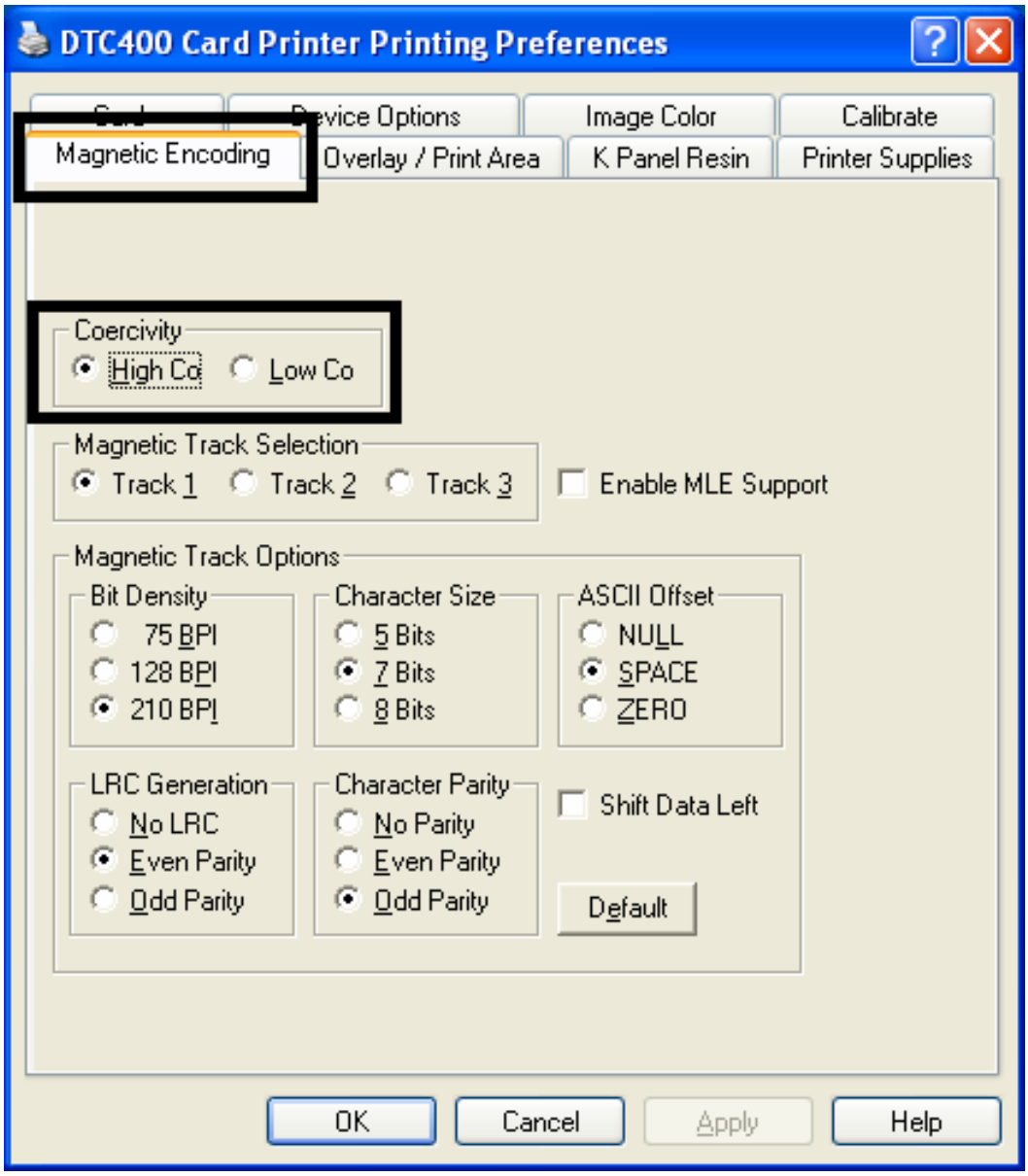


Resolving the Mag Verify Error (continued)

Step	Procedure
2	Check to ensure that the cards are loaded with the Magnetic Stripe facing Up and towards the front of the Printer.
3	a. Press on the **Resume** button. b. If the error continues continue to step 4
4	Verify the Driver settings if cards are loaded properly. See the Using the Magnetic Encoding tab (DTC400) procedure.
5	Verify that data is being encoded to the Magnetic Stripe. a. Clear any Error Messages from the LCD by unplugging the Printer and reapplying power. b. Remove the failed card. c. Use a Magnetic Stripe reader or magnetic developer spray to determine if data is being written to the Magnetic Stripe. d. If data is not being written to the Magnetic Stripe, • Open the front cover. • Remove the Magnetic Module cover screw. • Remove the Magnetic Module cover. • Verify that the Magnetic Module is seated securely into the Magnetic Module docking station. e. If the Magnetic Module is properly seated, replace the magnetic head (as needed). (**Note:** See the current DTC400 Service Manual for related instructions in the Parts Replacement Section.) f. If data is being written to the Magnetic Stripe, the Magnetic Offset may need to be adjusted. See the Using the Mag Top of Form Option procedure.

Resolving the Mag Verify Error (continued)

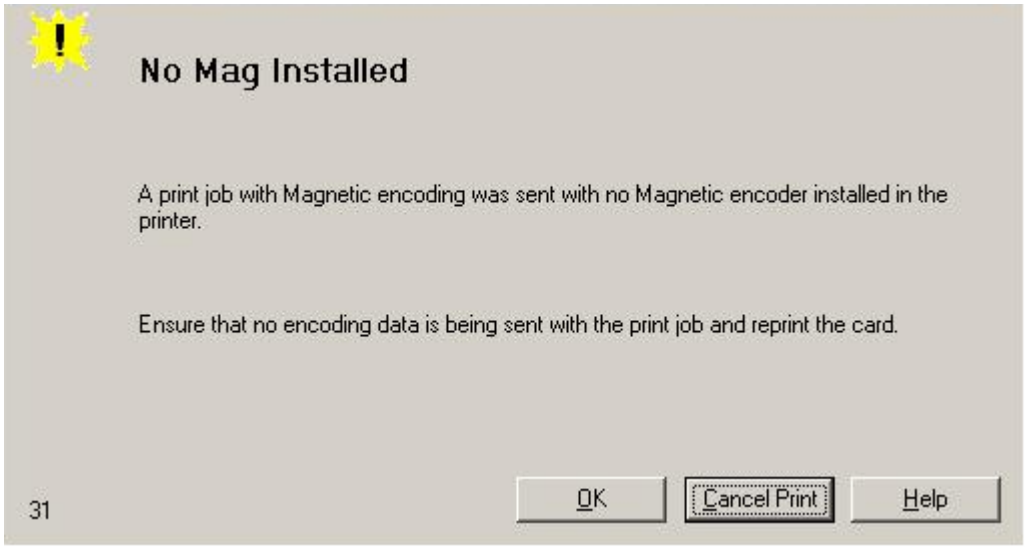
Step	Procedure
6	Verify that the coercivity of the cards matches the Driver Settings.



Resolving the No Mag Installed Error

All Troubleshooting procedures assume that only factory-authorized supplies are in use in the Printer.

Step	Procedure
1	Review the following information. • **Symptom:** There is not Magnetic Encoder installed. • **Printer Error State:** A print job with Magnetic encoding was sent with no Magnetic encoder installed in the Printer. • **LCD Error Display:** No Mag Installed • **Driver Monitor Error Display:** No Mag Installed


No Mag Installed
A print job with Magnetic encoding was sent with no Magnetic encoder installed in the printer.
Ensure that no encoding data is being sent with the print job and reprint the card.
31
OK
Cancel Print
Help

Resolving the No Mag Installed Error (continued)

Step	Procedure
2	Press the **Cancel Print** button on the Driver Monitor Error Display Message.
3	Reboot the Printer by cycling the power.
4	Verify that the Printer has a Magnetic Encoder installed. a. Open the front cover. b. Remove the Magnetic Module cover screw. c. Remove the Magnetic Module cover. d. Verify that the Printer has a Magnetic Module installed. (**Note:** If the Printer is equipped with a Magnetic Encoder Module, ensure that it is seated securely into the Magnetic Module docking station. If the issue persists, replace the Magnetic Module. See the DTC400 Service Manual for replacement procedures.)
5	If the Printer has no Magnetic Encoder Module, verify that the encoding data was sent in error, check the appropriate software user's manual for encoding instructions.

Resolving a Ribbon Sensor Error (Ribbon Miscue)

All Troubleshooting procedures assume that only factory-authorized supplies are in use in the Printer.

Step	Procedure
1	Review the following information. • **Symptom:** The Printer rolls through Ribbon and errors out • **Printer Error State**: The Printer cannot find the next panel on the Ribbon. • **LCD Error Display:** Ribbon Miscue • **Driver Monitor Error Display**: Ribbon Sensor

Ribbon Sensor Error
The Printer cannot find the next panel on the ribbon.
Check that the Ribbon cartridge is installed properly and press resume. To cancel, click on Cancel Print.
23
OK
Cancel Print
Help

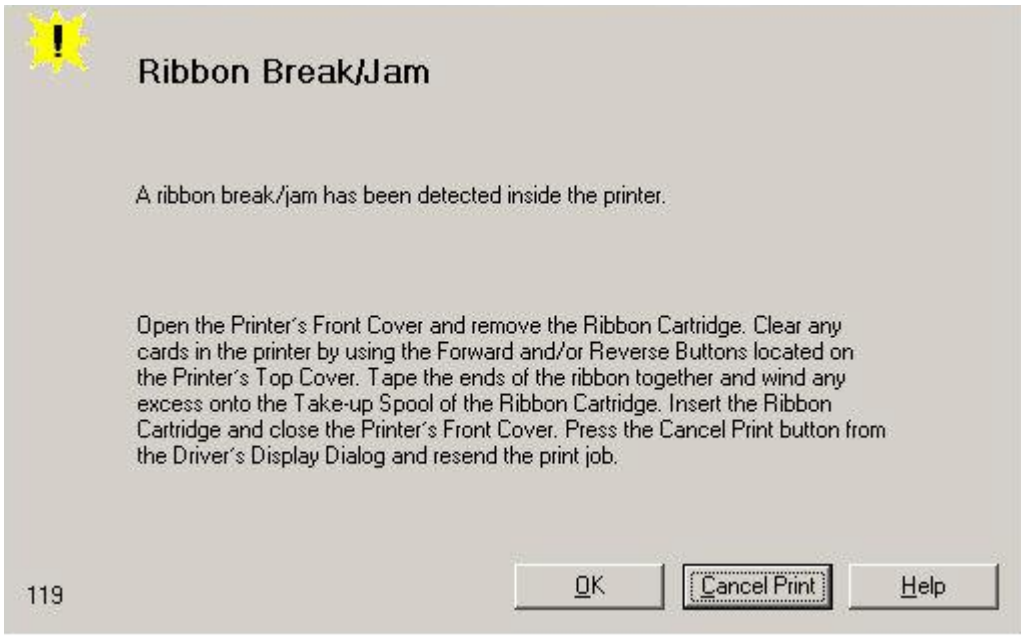
Resolving a Ribbon Sensor Error (Ribbon Miscue) (continued)

Step	Procedure
2	Open the front cover and remove the Ribbon Cartridge. a. Check that the Ribbon is in good condition and not wrinkled or broken. b. If Ribbon is broke or wrinkled, repair the Ribbon and wind up the take-up roll 4-color panels past the damaged area.
3	Press on the **Resume** button. If the issue persists, continue to Step 4.
4	Replace the Ribbon Cartridge. a. Press on the **Resume** button. b. If the issue persists, continue to Step 5.
5	Press the **Cancel Print** button on the Driver Monitor Error Display Message.
6	Reboot the Printer by cycling the power.
7	Using the driver calibration tab calibrate the Ribbon Sensor. If the issue persists, continue to Step 8.
8	Replace the Ribbon Sensor.

Resolving a Ribbon Break Jam Error

All Troubleshooting procedures assume that only factory-authorized supplies are in use in the Printer.

Step	Procedure
1	Review the following information. • **Symptom:** The Print Ribbon has become jammed or has broken in the Printer • **Printer Error State:** The Ribbon Supply Encoder Sensor has unexpectedly stop receiving information from the Ribbon Encoder • **LCD Error Display:** Ribbon Break/Jam • **Driver Monitor Error Display:** Ribbon Break/Jam


Ribbon Break/Jam
A ribbon break/jam has been detected inside the printer.
Open the Printer's Front Cover and remove the Ribbon Cartridge. Clear any cards in the printer by using the Forward and/or Reverse Buttons located on the Printer's Top Cover. Tape the ends of the ribbon together and wind any excess onto the Take-up Spool of the Ribbon Cartridge. Insert the Ribbon Cartridge and close the Printer's Front Cover. Press the Cancel Print button from the Driver's Display Dialog and resend the print job.
119
OK
Cancel Print
Help

Resolving a Ribbon Break Jam Error (continued)

Step	Procedure
2	Open the front cover and remove the Ribbon Cartridge. • If Ribbon is broken, continue to Step 3. • If Ribbon is in good condition, continue to Step 6.
3	Adjust the print offset. See the Using the Print Top of Form Option procedure. If the issue persists, continue to Step 4.
4	Repair the Ribbon and wind up the take-up roll 4 color panels past the damage area. a. Press on the **Resume** button. b. If the issue persists, continue to Step 5.
5	Use the Fargo Workbench Printer Utility to cycle the Printhead to ensure proper Printhead operation. See Fargo Workbench Printer Utility. • If the Printhead does not cycle properly, see Resolving the Headlift Motor / Sensor Error. • If the Printhead functions properly, continue to Step 6.
6	Replace the Ribbon Cartridge. a. Press on the **Resume** button. b. If the issue persists, continue to Step 7.
7	Remove the rear cover in order to check that the Ribbon Encoder Sensor is securely connected to the J-4 Main Board connection and to the Encoder Sensor. a. Press on the **Resume** button. b. If the issue persists, replace the Encoder Sensor.

Resolving a Ribbon Out Error

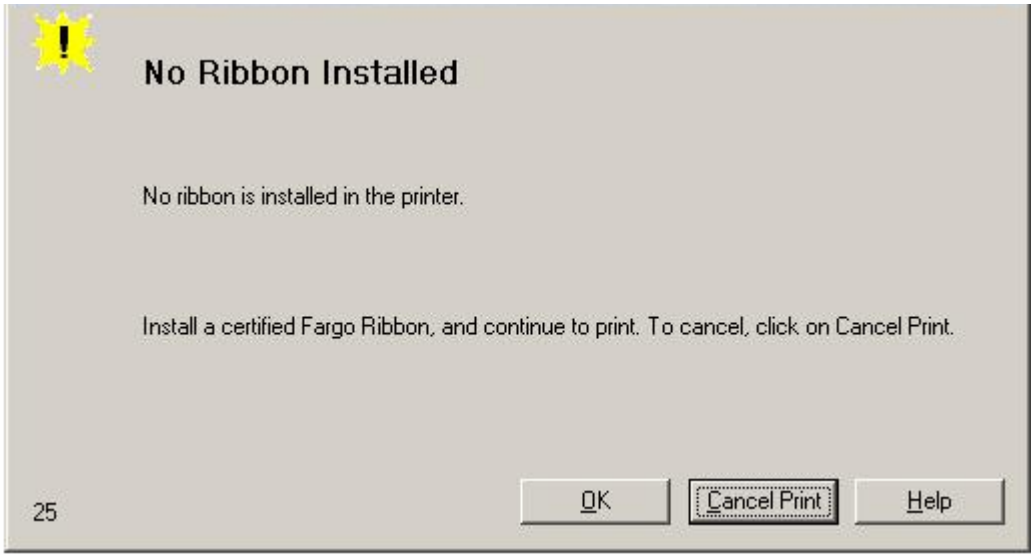
All Troubleshooting procedures assume that only factory-authorized supplies are in use in the Printer.

Step	Procedure
1	Review the following information. • **Symptom:** Printer will not print. • **Printer Error State:** The Ribbon Sensor has detected the End Of Ribbon mark • **LCD Error Display**: Ribbon Out • **Driver Monitor Error Display:** Ribbon Out
2	Replace the Ribbon Cartridge a. Press on the **Resume** button.

Resolving a No Ribbon Installed Error

All Troubleshooting procedures assume that only factory-authorized supplies are in use in the Printer.

Step	Procedure
1	Review the following information. • **Symptom:** Printer errors out as soon as it receives data from PC • **Printer Error State:** The Printer RFID Sensor is not receiving a signal from the Ribbon • **LCD Error Display:** No Ribbon • **Driver Monitor Error Display:** No Ribbon Installed


No Ribbon Installed
No ribbon is installed in the printer.
Install a certified Fargo Ribbon, and continue to print. To cancel, click on Cancel Print.
25
OK
Cancel Print
Help

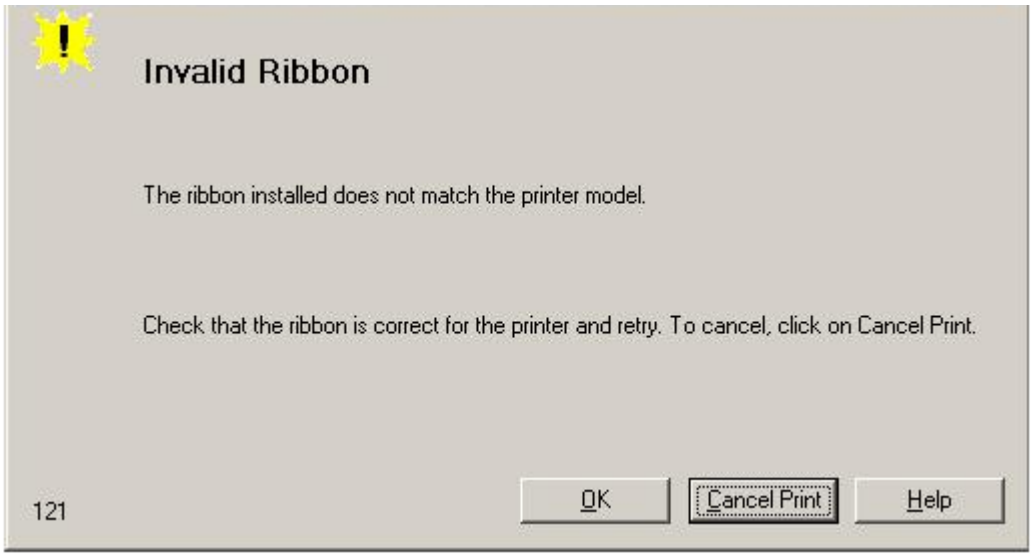
Resolving a No Ribbon Installed Error (continued)

Step	Procedure
2	Verify that a Ribbon Cartridge is installed in the Printer. a. Press on the **Resume** button. b. If the issue persists, continue to Step 3.
3	Remove the rear cover and check that the Ribbon RFID cable is securely connected to the Main Board (J-5) and the RFID Sensor. • If the connections are loose, reattach them. • Press on the **Resume** button. • If the connections are good or if the issue persists, continue to Step 4.
4	Replace the Ribbon RFID Sensor.

Resolving a Invalid Ribbon Error

All Troubleshooting procedures assume that only factory-authorized supplies are in use in the Printer.

Step	Procedure
1	Review the following information. • **Symptom:** Printer errors out as soon as it receives data from the PC • **Printer Error State:** The Ribbon installed does not match the Printer model. • **LCD Error Display**: Invalid Ribbon • **Driver Monitor Error Display**: Invalid Ribbon


Invalid Ribbon
The ribbon installed does not match the printer model.
Check that the ribbon is correct for the printer and retry. To cancel, click on Cancel Print.
121
OK
Cancel Print
Help

Resolving a No Ribbon Installed Error (continued)

Step	Procedure
2	Verify that the Ribbon Cartridge installed is designed for the correct Printer model.
3	Press on the **Resume** button. If the issue persists, continue to Step 4.
4	Remove the rear cover and check that the Ribbon RFID cable is securely connected to the Main Board (J-5) and the RFID Sensor. • If the connections are loose, reattach • Press on the **Resume** button. • If the connections are good or if the issue persists, continue to Step 5.
5	Replace the Ribbon RFID Sensor.

Resolving a Wrong Ribbon Error

All Troubleshooting procedures assume that only factory-authorized supplies are in use in the Printer.

Step	Procedure
1	Review the following information. • **Symptom:** Printer errors out as soon as it receives data from the PC • **Printer Error State:** The Ribbon installed does not match the Printer Driver information • **LCD Error Display:** Wrong Ribbon • **Driver Monitor Error Display:** Wrong Ribbon

Wrong Ribbon Installed
An incorrect ribbon has been installed, or a driver setting is incorrect.
Ensure that the appropriate ribbon is installed and press Resume. To cancel, click on Cancel Print.
21
OK
Cancel Print
Help

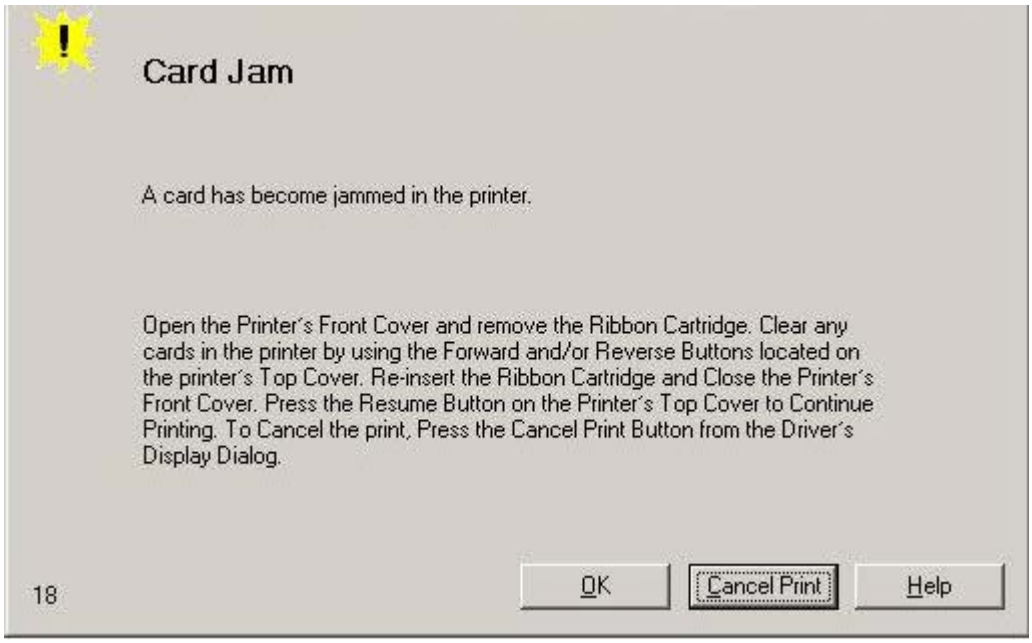
Resolving a Wrong Ribbon Error (continued)

Step	Procedure
2	Verify the Driver settings are correct. a. Open the Printer Control Panel from the Computer. • Right click on the DTC400 Card Printer and select **Printing Preferences**. b. Click on the Device Option tab. c. Click on the **auto select** button. d. Check that the Ribbon type matches the Ribbon selected.
3	Press on the **Resume** button. If the issue persists, continue to Step 4.
4	Remove the rear cover and check that the Ribbon RFID cable is securely connected to the Main Board (J-5) and the RFID Sensor. • If the connections are loose, reattach it. • Press on the **Resume** button. • If the connections are good or if the issue persists, continue to Step 5.
5	Replace the Ribbon RFID Sensor.

Resolving a Card Jam Error

All Troubleshooting procedures assume that only factory-authorized supplies are in use in the Printer.

Step	Procedure
1	Review the following information. • **Symptom:** Card is jammed. • **Printer Error State**: Card TOF Sensor is detecting no card motion • **LCD Error Display:** Card Jam • **Driver Monitor Error Display:** Card Jam


Card Jam
A card has become jammed in the printer.
Open the Printer's Front Cover and remove the Ribbon Cartridge. Clear any cards in the printer by using the Forward and/or Reverse Buttons located on the printer's Top Cover. Re-insert the Ribbon Cartridge and Close the Printer's Front Cover. Press the Resume Button on the Printer's Top Cover to Continue Printing. To Cancel the print, Press the Cancel Print Button from the Driver's Display Dialog.
18
OK
Cancel Print
Help

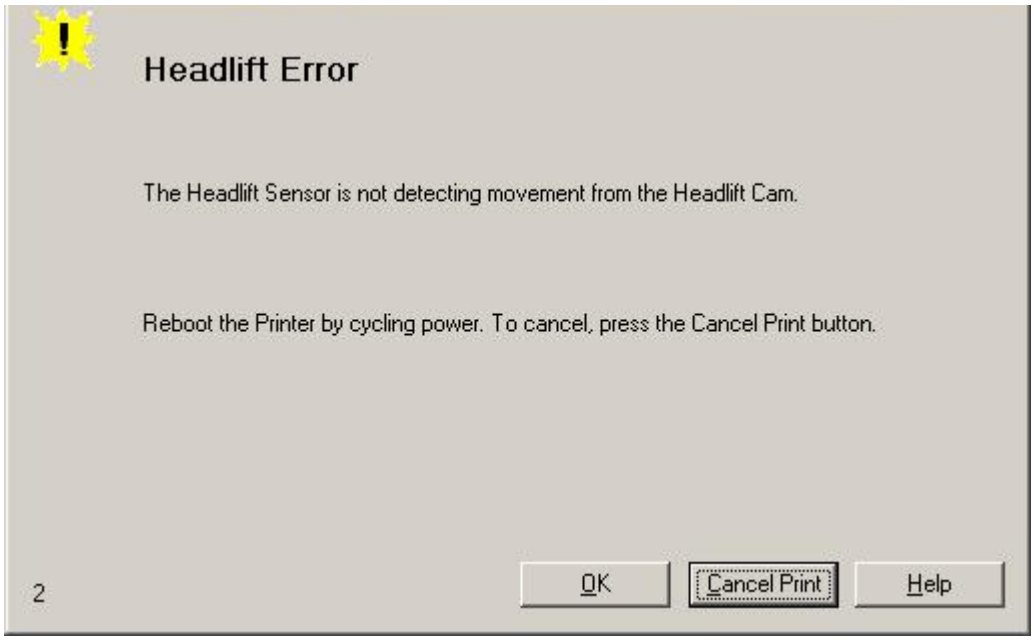
Resolving a Wrong Ribbon Error (continued)

Step	Procedure
2	Look for a jammed card in the Printer. a. Open the Printer's front cover. b. Remove the Ribbon Cartridge from the Printer. c. Check to see if a card is jammed in the print station of the Printer. d. If a card is found in the print station, continue to Step 3. e. If no card was found in the print station, continue to Step 4.
3	Clearing a jammed card. a. If a card is jammed in the Printer, use the **Cancel button** and the **Pause button** to move the Feed Rollers and free the card. b. The card can then be fed out of the Printer.
4	Test the Card Sensor. a. Remove the rear cover. b. Using a Digital Voltmeter, connect the negative lead to ground. c. Connect the positive lead to Pin 10 of J4. • If **blocked**, the Sensor should read 4.9 to 5.5 VDC. • If **unblocked**, the Sensor should read 0.15 to 0.18 VDC. d. If the voltages do not read correctly, replace the Sensor. (**Note:** See the current DTC400 Service Manual for related instructions in the Parts Replacement Section.)

Resolving a Headlift Motor or Sensor Error

All Troubleshooting procedures assume that only factory-authorized supplies are in use in the Printer.

Step	Procedure
1	Review the following information. • **Symptom:** The Printhead continuously cycles or does not cycle at all • **Printer Error State:** Headlift Sensor is not detecting movement from the Headlift Cam • **LCD Error Display:** Head Lift Error • **Driver Monitor Error Display:** General Error


Headlift Error
The Headlift Sensor is not detecting movement from the Headlift Cam.
Reboot the Printer by cycling power. To cancel, press the Cancel Print button.
2
OK
Cancel Print
Help

Resolving a Headlift Motor or Sensor Error (continued)

Step	Procedure
2	Press the **Cancel Print** button on the Driver Monitor Error Display Message.
3	Reboot the Printer by cycling the power.
4	Cycle the Headlift Motors. a. Use the Fargo Workbench Printer Utility to cycle the Printhead to ensure proper Printhead operation. See Fargo Workbench Printer Utility. b. Verify that the Headlift Motor turns. c. If the Motor does not turn or jams, continue to Step 5.
5	Check the Headlift Motor Main Board Connection (J20). a. Unplug the Printer. b. Remove the back cover. c. Verify that connection J20 is properly connected to the Main Board. d. If the Motor does not turn, continue to Step 7.
6	Test the Headlift Sensor. a. Remove the back cover. b. Attach the positive lead from a Digital Voltmeter to Pin 1 of J9. Attach the negative lead to the Pin 3 of J9. • If **open**, the Sensor should read 0.17 to 0.9 VDC. • If **closed**, the Sensor should read 4.9 to 5.5 VDC. c. Replace the Sensor if the voltages do not read correctly. (**Note:** See the current DTC400 Service Manual for related instructions in the Parts Replacement Section.) d. If the Motor does turn, continue to Step 7.
7	Replace the Headlift Motor. (**Note:** See the current DTC400 Service Manual for related instructions in the Parts Replacement Section.) a. If the Motor does turn, continue to Step 8.
8	Replace the Main Board.

Resolving the Cover Open Error Message

All Troubleshooting procedures assume that only factory-authorized supplies are in use in the Printer.

Step	Procedure
1	Review the following information. • **Symptom:** The Printer errors immediately after sending a print job, or the Rollers do not operate by pressing the cottons on the front panel (when the cover is open). • **Printer Error State:** The front cover Sensor detects that the cover is open • **LCD Error Display:** Cover Open • **Driver Monitor Error Display:** None
2	Check for debris, as follows: a. Open the front cover and check that no debris has accumulated in the lid Sensor opening. Use compressed air to clean the opening id as needed. b. If the Sensor still does not work, continue to Step 3.
3	Check that the Sensor tab on the front cover is not damaged. a. Open the front cover and examine the Lid Sensor tab for damage, if the Sensor tab is damaged, replace the front cover. (**Note:** See the current DTC400 Service Manual for related instructions in the Parts Replacement Section.) b. If the Sensor still does not work, continue to Step 4.
4	Replace the Main Board. (**Note:** See the current DTC400 Service Manual for related instructions in the Parts Replacement Section.)

Resolving the Blank Output issues

All Troubleshooting procedures assume that only factory-authorized supplies are in use in the Printer.

Step	Procedure
1	Review the following information. • **Symptom:** A card is ejected blank (that should be printed). • **Printer Error State:** None • **LCD Error Display:** None • **Driver Monitor Error Display:** None
2	Run a self-test. a. Clear any card jams. b. Unplug power from the Printer. c. While holding down the **Pause** button, reapply power. (**Note:** A self-test card will be printed.)
3	Look for an image on the Ribbon. a. After a self-test has been run, open the top cover. b. Remove the Print Ribbon from the Printer. c. Visually inspect the set of panels that were last used by the Printer. d. If an image is noticeable on the used Ribbon, continue to Step 4. e. If an image is not noticeable on the used Ribbon, continue to Step 5.

Resolving the Blank Output issues (continued)

Step	Procedure
4	Adjust the placement. a. Reset the Printer to clear any Error Messages by removing the power and reapplying it. b. Open the Printer Control Panel from the Computer. • Right click on the DTC400 Card Printer and select **Printing Preferences**. c. Click on the Calibrate tab. d. Click on the **Settings** button. e. Adjust the Image Placement Setting by +5. f. Click on the **OK** button. g. Print a self-test. h. After adjusting the Image Placement, if a white border appears on the card, adjust the image placement back toward its original value in increments of 2 until the white edge is gone. i. If still having blank card issues, continue to Step 5.
5	Check the Printhead connections. a. Remove the Printer power and USB cables. b. Turn the Printer over to gain access to the base plate. c. Remove the one (1) thumbscrew from the Printhead cover plate and remove the cover plate. d. Depress the Printhead locking tabs and remove the Printhead. e. Check to ensure that Power and Data Cables (that connect to the Printhead) are properly seated. f. Remove the Back Cover. g. Ensure that the Printhead Power/Data Cable is properly seated on J16 on the Main board. h. If still having blank card issues, continue to Step 6.

Resolving the Blank Output issues (continued)

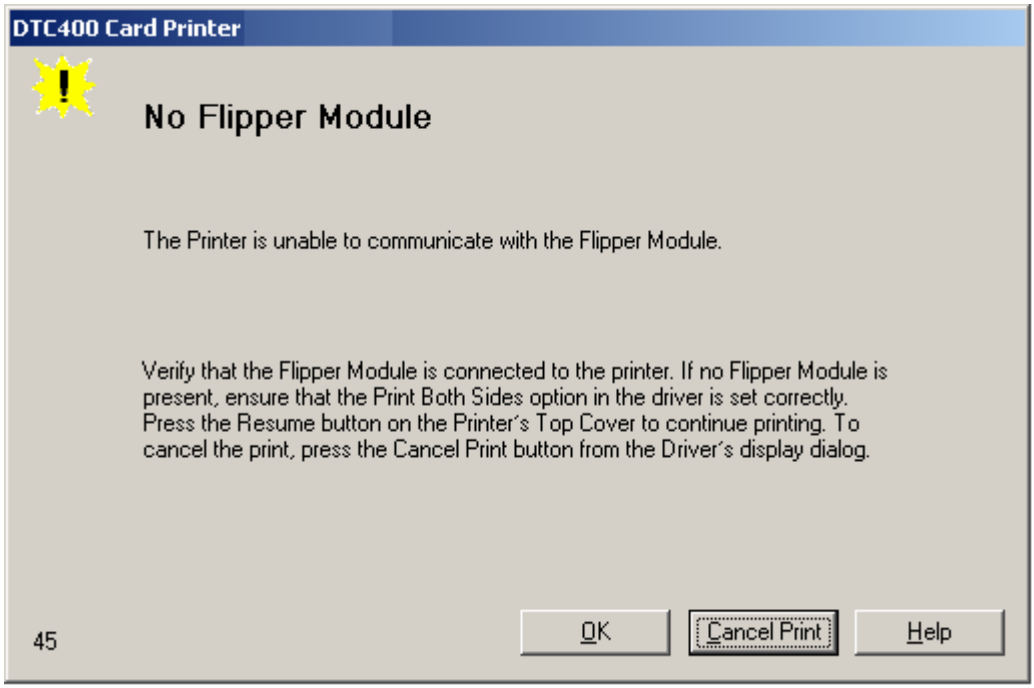
Step	Procedure
6	Ensure that the proper voltage is being applied to the Printhead. a. Remove the back cover. b. Using a Digital Voltmeter, connect the negative lead to ground. c. Probe Pins 1 to 5 of the Printhead power connection on J16. d. Ensure that a voltage between 22 to 23 VDC is read on each pin. • If less than 22 volts is read on any of the pins, replace the Printhead. • If still having issue with blank cards, replace the Main Board. (See the current DTC400 Service Manual for instructions on replacing the Main Board in the Parts Replacement Section.)

Flipper Table Module Assembly Problems

Resolving the No Flipper Table Module problem

All Troubleshooting procedures assume that only factory-authorized supplies are in use in the Printer. See the Flipper Table Module Installation section (as needed).

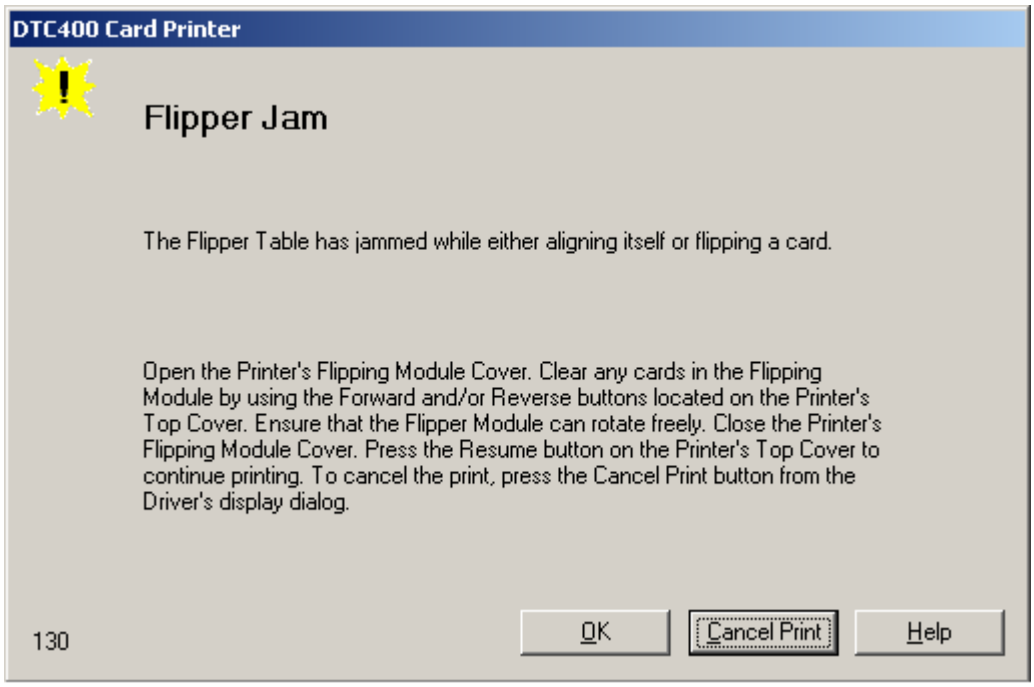
Step	Procedure
1	Review the following information. • **Symptom:** The Flipper Table Module Assembly is not functioning. • **Printer Error State:** The Printer is unable to communicate with the Flipper Module. • **LCD Error Display:** No Flip Installed • **Driver Monitor Error Display:** No Flipper Module


DTC400 Card Printer
No Flipper Module
The Printer is unable to communicate with the Flipper Module.
Verify that the Flipper Module is connected to the printer. If no Flipper Module is present, ensure that the Print Both Sides option in the driver is set correctly. Press the Resume button on the Printer's Top Cover to continue printing. To cancel the print, press the Cancel Print button from the Driver's display dialog.
45
OK
Cancel Print
Help

Resolving the Flipper Jam Error

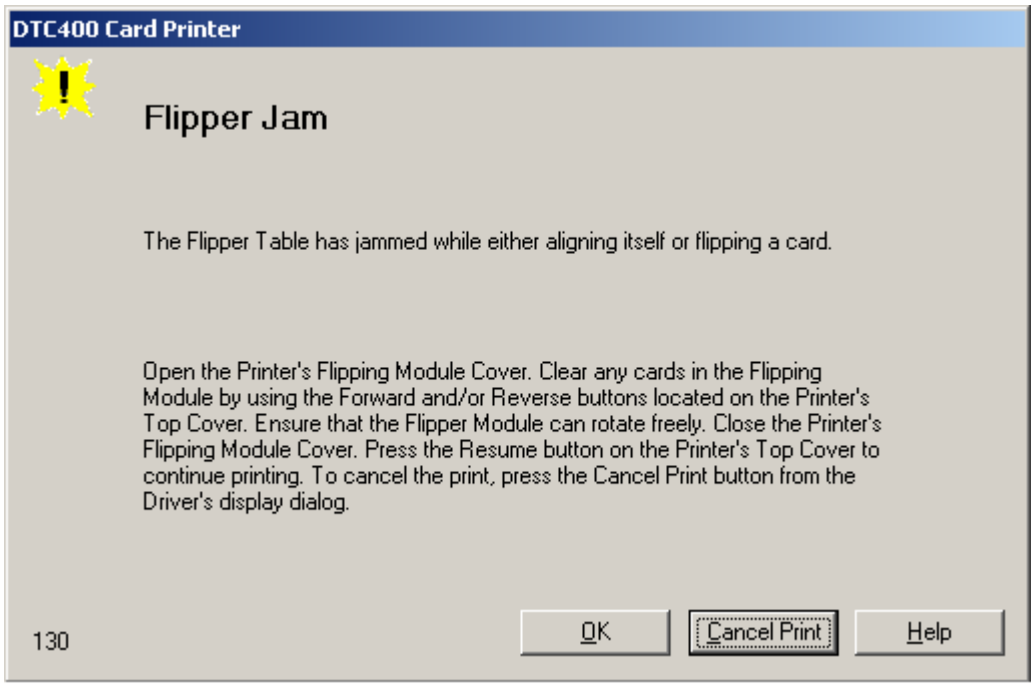
All Troubleshooting procedures assume that only factory-authorized supplies are in use in the Printer. See the Flipper Table Module Installation section (as needed).

Step	Procedure
1	Review the following information. • **Symptom:** The Flipper Table Module is jamming. • **Printer Error State:** The Flipper Table has jammed while either aligning itself or flipping a card. • **LCD Error Display:** Flipper Jam • **Driver Monitor Error Display:** Flipper Jam


DTC400 Card Printer
Flipper Jam
The Flipper Table has jammed while either aligning itself or flipping a card.
Open the Printer's Flipping Module Cover. Clear any cards in the Flipping Module by using the Forward and/or Reverse buttons located on the Printer's Top Cover. Ensure that the Flipper Module can rotate freely. Close the Printer's Flipping Module Cover. Press the Resume button on the Printer's Top Cover to continue printing. To cancel the print, press the Cancel Print button from the Driver's display dialog.
130
OK
Cancel Print
Help

Resolving the Flipper Jam Error (continued)

Step	Procedure
2	Open the Printer's Flipper Table Module Cover. a. Clear any cards in the Flipper Table Module by using the **Forward** and/or **Reverse** buttons located on the Printer's Top Cover. b. Ensure that the Flipper Table Module can rotate freely. c. Close the Printer's Flipper Table Module. d. Press the **Resume** button on the Printer's Top Cover to continue printing. e. To cancel the printing, press the **Cancel Print** button from the Driver's display dialog.


DTC400 Card Printer
Flipper Jam
The Flipper Table has jammed while either aligning itself or flipping a card.
Open the Printer's Flipping Module Cover. Clear any cards in the Flipping Module by using the Forward and/or Reverse buttons located on the Printer's Top Cover. Ensure that the Flipper Module can rotate freely. Close the Printer's Flipping Module Cover. Press the Resume button on the Printer's Top Cover to continue printing. To cancel the print, press the Cancel Print button from the Driver's display dialog.
130
OK
Cancel Print
Help

Diagnosing Image Problems

Resolving the Pixel Failure problems

All Troubleshooting procedures assume that only factory-authorized supplies are in use in the Printer.

Step	Procedure
1	Review the following information. • **Symptom:** A thin line or scratch travels the entire length of the card (See sample image below). • **Printer Error State:** None • **LCD Error Display:** None • **Driver Monitor Error Display:** None
2	Check the card stock for scratches. Replace the cards (as needed).
3	Examine the Printhead for visible damage.
4	Clean the Printhead. See the Cleaning the Printhead procedure.
5	Replace the Printhead if the problem persists. See **Replacing the Printhead Assembly (D900400)** in the current DTC400 Service Manual.

Resolving the Card Surface Debris problems

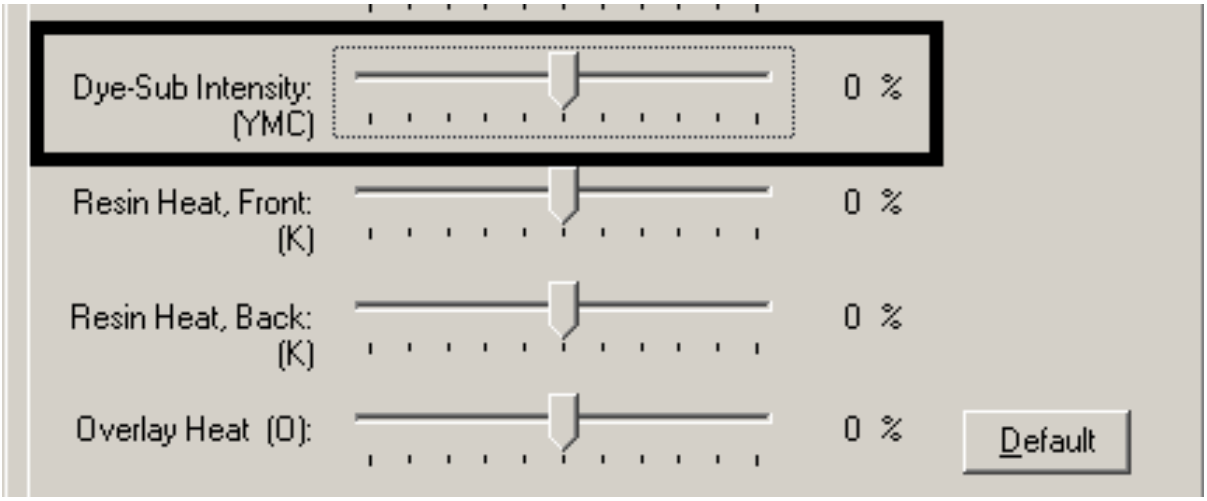
All Troubleshooting procedures assume that only factory-authorized supplies are in use in the Printer.

Step	Procedure
1	Review the following information. • **Symptom:** Prints have spots (white or colored voids) and/or dust on them (See sample image below). • **Printer Error State:** None • **LCD Error Display:** None • **Driver Monitor Error Display:** None
2	Ensure the cards are clean and stored in a dust-free environment. Do not use cards with embedded contaminants in the surface.
3	Clean the inside of the Printer. See Cleaning the Printer's Interior.
4	Clean the Cleaning Roller. See Cleaning the Card Feed and Cleaning Rollers.

Resolving the Incorrect Image Darkness problems

All Troubleshooting procedures assume that only factory-authorized supplies are in use in the Printer.

Step	Procedure
1	Review the following information. • **Symptom:** Printed cards are too dark or too light. • **Printer Error State:** None • **LCD Error Display:** None • **Driver Monitor Error Display**: None
2	Run a self-test to ensure that the issue is not with the Driver settings.
3	Adjust the **Dye-Sub Intensity** setting within the Image Color tab of the Printer Driver. See Using the Image Color tab (DTC400) procedure.



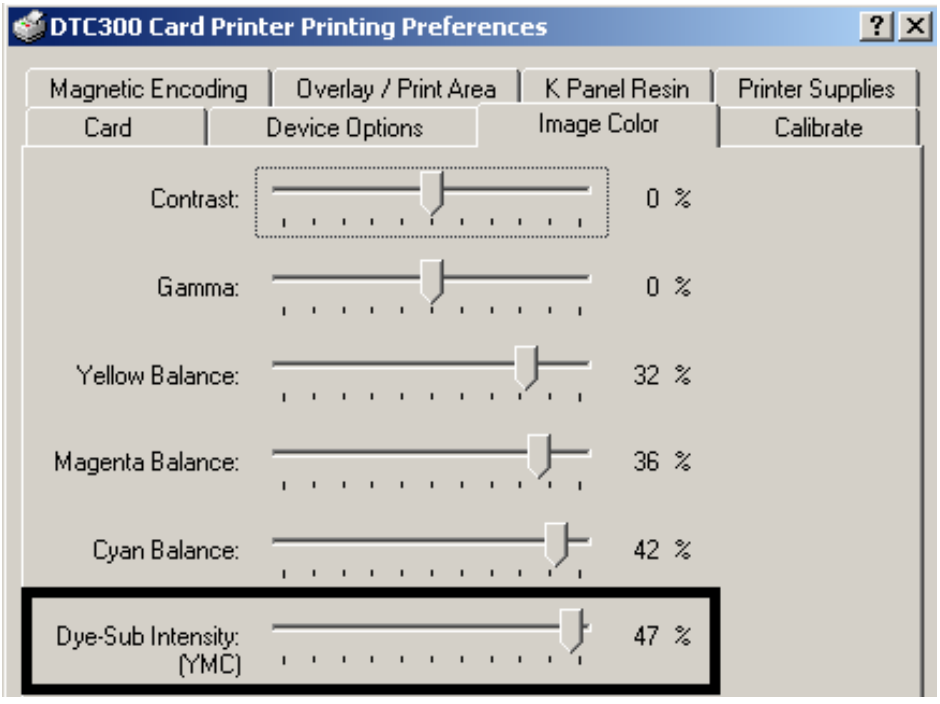
Resolving the Incorrect Image Darkness problems (continued)

Step	Procedure
4	Correct the **Image Darkness**. See the Using the Image Darkness Option procedure.

Resolving Ribbon Wrinkle problems

All Troubleshooting procedures assume that only factory-authorized supplies are in use in the Printer.

Step	Procedure
1	Review the following information. • **Symptom:** Printed cards have off-colored lines or streaks on them. • **Printer Error State:** None • **LCD Error Display:** None • **Driver Monitor Error Display:** None
2	Confirm that the Printer is using the most current Driver via: http://www.fargo.com
3	Reduce the **Dye-Sub Intensity** setting within the Image Color tab of the Printer Driver. See the Using the Image Color tab (DTC400).



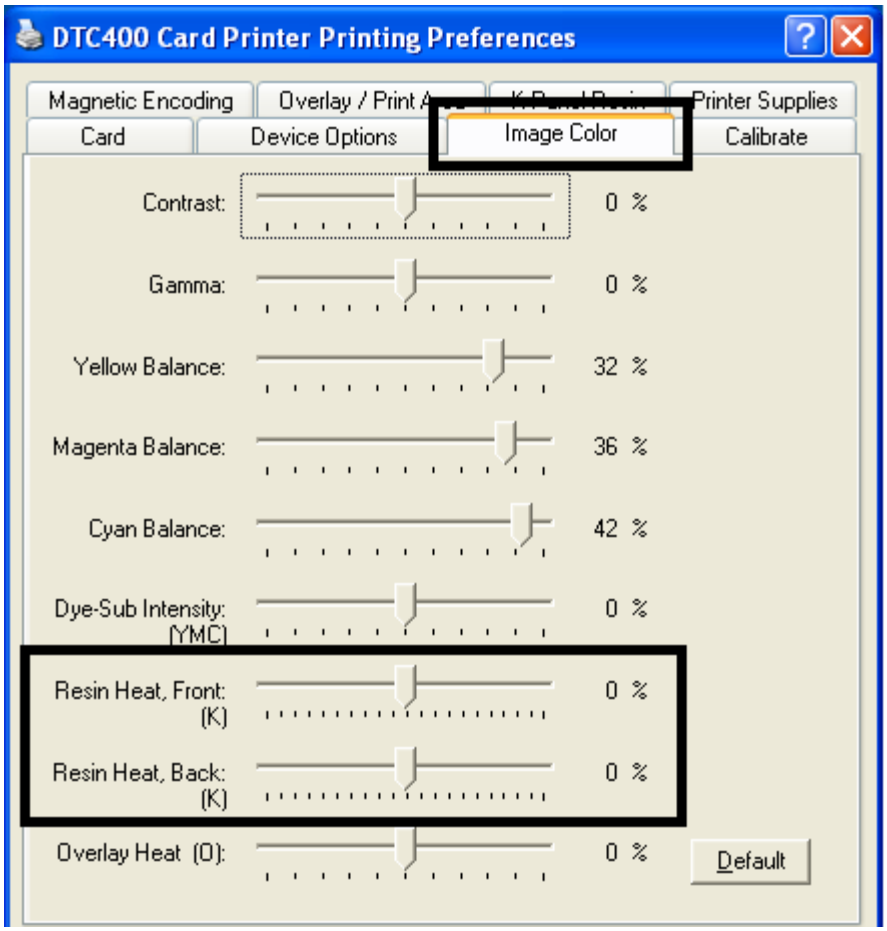
Resolving Ribbon Wrinkle problems (continued)

Step	Procedure
4	Reduce the Image Darkness. See the Using the Image Darkness Option procedure.

Resolving the Excessive Resin Printing problems

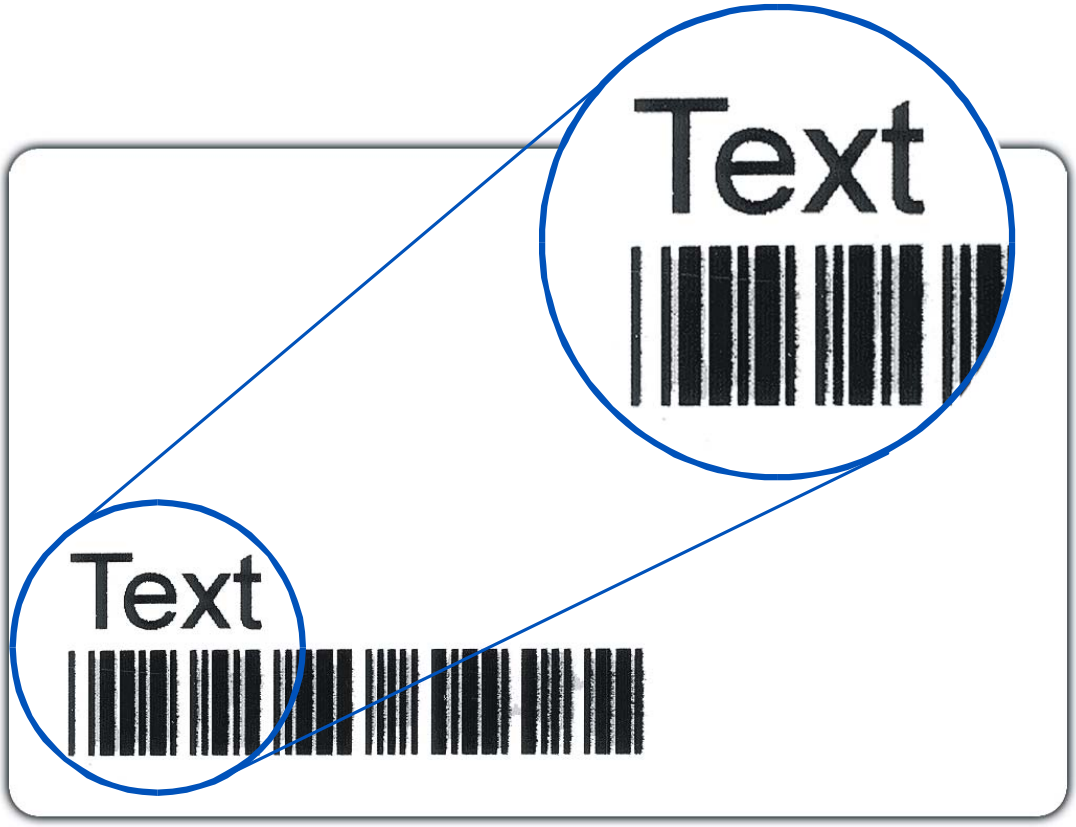
All Troubleshooting procedures assume that only factory-authorized supplies are in use in the Printer.

Step	Procedure
1	Review the following information. • **Symptom:** Black resin text and barcodes appear smeared or too thick. • **Printer Error State:** None • **LCD Error Display:** None • **Driver Monitor Error Display:** None
2	Reduce the Resin Heat setting within the Image Color tab of the Printer Driver. See the Using the Image Color tab (DTC400).



Resolving the Excessive Resin Printing problems (continued)

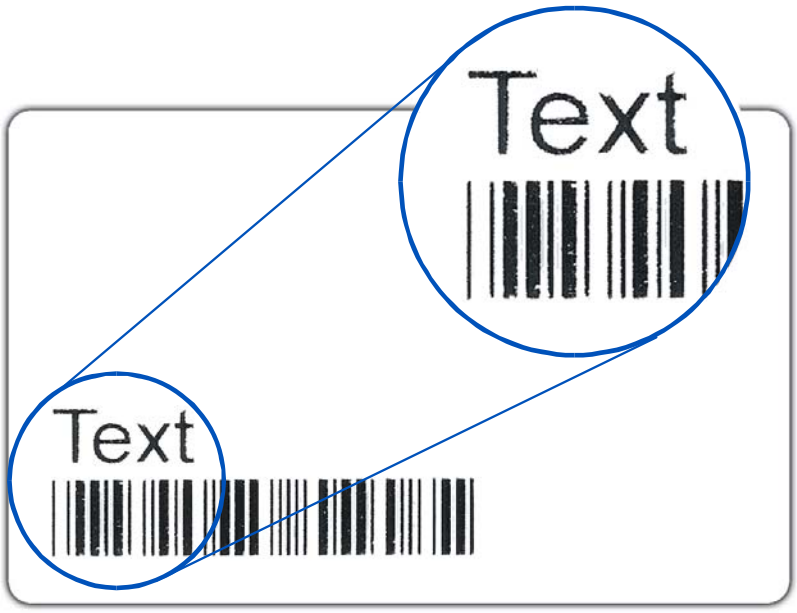
Step	Procedure
3	Reduce the Image Darkness. See the Using the Image Darkness Option procedure.



Resolving the Incomplete Resin printing problems

All Troubleshooting procedures assume that only factory-authorized supplies are in use in the Printer.

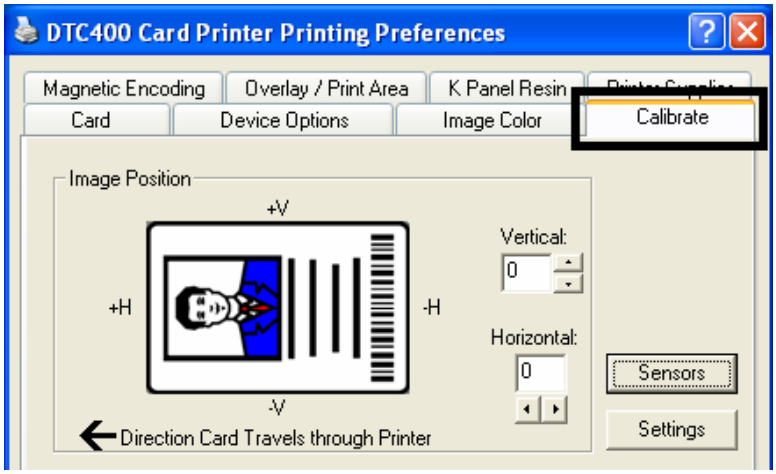
Step	Procedure
1	Review the following information. • **Symptom:** Black resin text and barcodes appear faded or too light. • **Printer Error State:** None • **LCD Error Display:** None • **Driver Monitor Error Display:** None
2	Increase the **Resin Heat** setting within the Image Color tab of the Printer Driver. See the Using the Image Color tab (DTC400).
3	Increase the **Image Darkness**. See the Using the Image Darkness Option procedure.



Resolving the Image Placement problems

All Troubleshooting procedures assume that only factory-authorized supplies are in use in the Printer. This procedure is used to adjust the position of the card in the Print driver and does not change the internal settings of the Printer. See Using the Printer Calibration Utility (DTC400) for instructions on changing the Printers internal settings.

Step	Procedure
1	Review the following information. • **Symptom:** Printing is cut off or is not centered on the card, or a white border appears. • **Printer Error State:** None • **LCD Error Display:** None • **Driver Monitor Error Display:** None
2	Verify if the Image Position option within the Calibrate tab is set correctly or incorrectly. a. Open the Printer Control Panel from the Computer. • Right click on the DTC400 Card Printer and select **Printing Preferences**. b. Click on the Calibrate tab. c. Adjust the **Vertical** and/or **Horizontal Image Position** settings based on where the white border is on the card.



Resolving the Image Placement problems (continued)

Step	Procedure
3	Verify if the **Horizontal Image Position Setting** is set correctly or incorrectly. See the graphic below. • If the white border is on the leading edge of the card, adjust the Horizontal value by +2. • If the white border is on the trailing edge of the card, adjust the Horizontal value by -2. a. Click on **OK**. b. Run a self-test. c. If the white border is diminished, continue the adjustment until it is gone.

Graphic A

Resolving the Image Placement problems (continued)

Step	Procedure
4	Verify if the **Vertical Image Position Setting** is set correctly or incorrectly. See the graphic below. • If the white border is on the top edge of the card, adjust the Vertical value by +2. • If the white border is on the bottom edge of the card, adjust the Vertical value by -2. a. Click on **OK**. b. Run a self-test. c. If the white border is diminished, continue the adjustment until it is gone.

Graphic B

Resolving the Poor Image Quality problems

All Troubleshooting procedures assume that only factory-authorized supplies are in use in the Printer.

Step	Procedure
1	Review the following information. • **Symptom:** Photos on the cards look pixilated or grainy, as shown below. • **Printer Error State:** None • **LCD Error Display:** None • **Driver Monitor Error Display:** None
2	Use high-resolution, 24-bit color images to always capture an image: • at a 24-bit color setting • at 300 dpi • at the same size that it will be printed on the card, as captured either with a scanner or with a digital camera If a small or low-resolution image is stretched or blown up, a pixilated or grainy effect will occur when printing, as shown below (right side).

Good

Bad

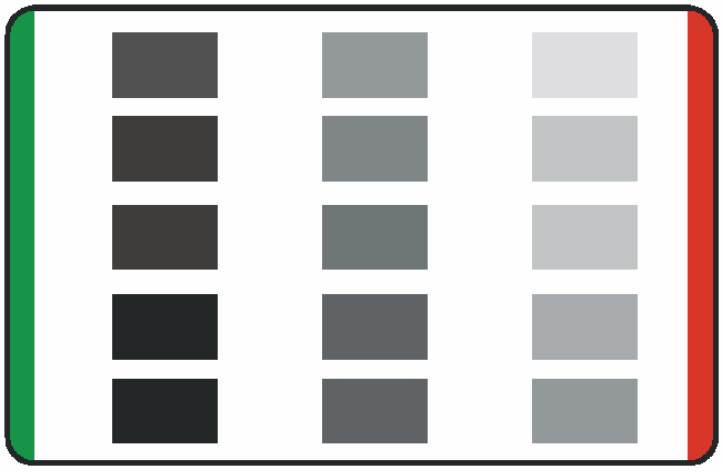
Running the Self Test

Perform a self-test after (a) an initial setup of the Printer, (b) a calibration procedure has been conducted, or (c) a part has been replaced to check for proper Printer operation.

Step	Procedure
1	Verify that a full-color or Premium Resin Ribbon Cartridge is installed and that cards are properly loaded. **Caution:** If the power is ON, disconnect the Power Cable from the Printer's rear panel.
2	Press and hold the **Pause/Resume** button.
3	While holding down the **Pause/Resume** button, plug the power cable back into the Printer.
4	• Full Color Ribbon Cartridge installed: The Printer will print a 3-color process gray scale on the front of the card. The overlay pass is not printed during the Self-test. (See Display A below) • Premium Resin Ribbon Cartridge installed: The Printer will print a single color gray scale on the front of the card. See Display B below)

Running the Standard Self Test Print

Display A - Full Color Test Print



Running the Magnetic Self Test (HiCo Only)

Perform a self-test after (a) an initial setup of the Printer, (b) a calibration procedure has been conducted, or (c) a part has been replaced to check for proper Printer operation.

Step	Procedure
1	Remove Ribbon Cartridge from the Printer and close the front cover **Caution:** If the power is ON, disconnect the Power Cable from the Printer's rear panel.
2	Press and hold the **Pause/Resume** button.
3	While holding down the **Pause/Resume** button, plug the power cable back into the Printer.
4	The Printer will Encode magnetic information on all 3 magnetic tracks

Section 5: Ethernet Option

Introduction

The Ethernet option includes the Ethernet port and the internal Printer Server.

- **Printer Management:** The Printer Driver provides bi-directional status information so you can monitor and manage the Printer just as you would any other networked Printer.
- **Compatibility:** The Fargo Ethernet option provides compatibility with TCP/IP and 802.3 Ethernet protocols with an IEEE 802.3 10/100Base-T Ethernet female RJ45 connector.
- **Application:** With the Ethernet Option properly installed and configured, these printers are able to print in the same manner as a printer directly connected to the PC via a USB interface.

Technical Specification - Ethernet Option

Here are the system requirements for Ethernet.

Caution: For safety purposes, Ethernet is not intended for a direct connection outside of the building.

Function	Requirement
Network	An IEEE 802.3 10/100 Base-T Ethernet network is required.
Printer	A Fargo Printer with the Ethernet option installed is required.
Printer Configuration	Since TCP/IP is used for the network communication, the Printer must be configured with an IP address and a subnet mask (before it can be seen on the network). An additional network setting for the Default Gateway can also be configured, which allows communication across the subnets.
Host Computer	A PC running Windows 2000, WindowsXP or Windows Server 2003, connected to the network is required.
Host Printer Driver	The host PC must have installed the correct Printer Driver with Ethernet support. (**Note:** This Driver must be configured for printing to the IP address of the Printer.)

Functional Specification - Ethernet Option

The Fargo Ethernet option includes these features.

Feature	Description
Simultaneous Printing	Provides the ability to simultaneously print from multiple PCs to the network printer.
Printer Feedback	Provides status information from the network Printer to the PC.
Web Pages	Provides easy Printer configuration with any web browser.
Log Messages	Provides logging of usage and error events via e-mail, UDP or TCP/IP.
Password Security	Provides security with passwords and configurable User permission levels.
Telnet	Provides a Telnet command line interpreter for Printer configuration.
SNMP	Provides an SNMP agent that supports MIB-II.
Upgrades	Provides support for Firmware upgrades over the network.
Troubleshooting	Provides a Ping client for network troubleshooting.
IP Tracer	Provides a utility (IP Tracer) used to find Fargo Printers with Ethernet connection on a local network. (**Note:** This utility is included on the CD-ROM and online at www.fargo.com.)

Network Services - Overview

The Ethernet option provides the services described in this section. (**Note:** Other additional services include a Ping client, address assignment and Printer discovery functions.)

Reviewing the Print Server

The Print Server provides printing services in the same manner as a printer connected directly to a USB interface except that the Printer is connected through the local area network to the client PC. The Print Server must be properly configured in order to provide this printing capability.

- The Print Server is capable of queuing up to eight (8) client PCs while printing. Communications between each PC and the Ethernet-enabled Fargo Printer are implemented over a bi-directional TCP/IP interface.
- All clients are able to send print jobs to the Printer and monitor Printer jobs and errors with the standard Windows printing system using the Fargo Printer Driver installed on their local PC.

In this way, the User knows whether or not a print job has been successful. Also, the User knows what problems have been encountered while processing the print job. Printing using Ethernet works in a manner similar to the USB-connected PC/printer.

Reviewing the Web Page Server

An HTTP service serves web pages that provide an interface through which to configure and monitor the Printer. (**Note:** Users may also monitor all print jobs that have been sent to the Printer from any client PC.)

Reviewing the Network Management Interface

The Ethernet-enabled Printer operates as an SNMP agent to allow central administrators to monitor and configure the network interface and the Printer. (**Note:** A standard host MIB-II is implemented to maximize the utility of the Printer on the network.)

Reviewing the Telnet Server

The Ethernet interface has a command line interpreter. (**Note:** The User can connect to the Printer using a Telnet session on their PC, issue commands to the Printer and receive response from the Printer.)

The Telnet commands are primarily used for network administration, and they will not be used by most Users. (**Note:** These commands will query the state of the Printer and configure various settings for the Printer. These include network settings, logging setting, User names and User passwords.)

Network Management Interface

The SNMP interface is described below.

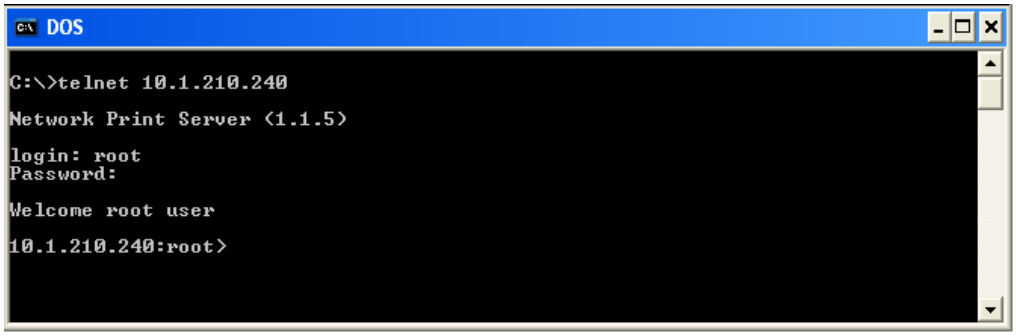
Interface	Description
SNMP	• The Ethernet interface is a fully-manageable SNMP agent that supports MIB-II. • The Ethernet interface is MIB II compliant, allowing SNMP managers to monitor protocol, network and routing statistics.

Telnet Command Line Interface

Initiating a Telnet Session

This procedure shows how to initiate a Telnet session from a PC in order to access the Telnet services provided by the Printer. Follow these instructions to issue Telnet commands.

Step	Description
1	Identify the IP address of your Printer. (**Note:** See the Accessing the IP address of your Printer.)
2	Initiate a Telnet session from a DOS window on your PC. At the DOS prompt, enter telnet [IP Address] **Example:** C:\>telnet 192.168.11.12 • All Telnet responses from the Printer will then be displayed in the Telnet session on the PC. • All commands entered will be sent to the Telnet client in the Printer.
3	Enter help or ? to get an on-window list of supported Telnet commands.



Reviewing the Telnet Command Table

The following table describes available Telnet commands. (**Note:** You can enter partial full-word commands: the Printer will respond with additional help. For example, you can enter list, and the Printer will respond with all subcommands to the list command.)

Telnet Command	Command Purpose	Command Format
?	Display help for Telnet commands.	?
help		
reset	Reset the Ethernet interface for the Printer/Encoder.	reset
ping	Send a ping command to another IP address as a test of the Ethernet interface.	ping <IPADDR>

Reviewing the Telnet Command Table (continued)

Telnet Command			Command Purpose	Command Format
list	all		Display all information about this Printer.	list all
	diff		Display all differences between current and stored network settings.	list diff
	uptime		Display how long since the interface was last reset.	list uptime
	sysinfo		Display information about the Printer (i.e., model, label, contact, location, Firmware version and date, and serial number).	list sysinfo
	ribbon		Display information about the installed Ribbon in the Printer.	list ribbon
	net		Display information about the current network settings of the Ethernet interface.	list net
	stored	net	Display information about the stored network settings of the Ethernet interface.	list stored net
	default	net	Display information about the default network settings of the Ethernet interface.	list default net
	user		Display information about the defined User names and their type (root or guest privileges).	list user

Reviewing the Telnet Command Table (continued)

Telnet Command			Command Purpose	Command Format
	lpq		Display information about print jobs and their settings.	list lpq
	printer		Display information about the Printer (i.e., model number, Firmware version and serial number).	list printer
	printer	sm	Display information about the secure mark settings of the Printer.	list printer sm

Reviewing the Telnet Command Table (continued)

Telnet Command			Command Purpose	Command Format
set	sysinfo	contact	Set the contact string.	set sysinfo label [<STRING>]
		location	Set the location string.	set sysinfo location [<STRING>]
		label	Set the label string.	set sysinfo label [<STRING>]
		from	Set all strings from default or current settings.	set sysinfo from default|current
	syslog	name	Change the name of a system log path	set syslog <LOG_NAME> name <NEW_NAME>
		type	Change the type of a system log path. This starts or stops logging on start of jobs or on faults.	set syslog <LOG_NAME> type [[-]job] [[-]pfault]
		dest	Change the destination of a system log path. This may be set to none, e-mail, udp or tcp.	set syslog <LOG_NAME> dest none|email|udp|tcp
		email	Change the e-mail address for e-mail notification for a system log path. It must specify a valid e-mail address.	set syslog <LOG_NAME> email <EMAIL>
		udp	Specify the IP address of the UPD system logging program.	set syslog <LOG_NAME> udp <IPADDRESS>
		from	Restore system log path settings from the default or current settings.	set syslog from default|current

Reviewing the Telnet Command Table (continued)

Telnet Command			Command Purpose	Command Format
set	user	add	Add a new User definition. Up to four (4) Users may be defined.	set user add <NAME>
		del	Delete a User definition.	set user del <NAME>
		passwd	Define a new password for a User.	set user passwd <NAME> [<PASSWORD>]
		type	Specify a User as root or guest. Only root Users have administrative rights to change network interface settings.	set user type <NAME> root|guest
		from	Restore User setting from default or stored settings.	set user from default|stored

Reviewing the Telnet Command Table (continued)

Telnet Command			Command Purpose	Command Format
store	net	addr	Store a new IP address.	store net addr <ADDRESS>
		mask	Store a new address mask.	store net mask <MASK>
		gateway	Store a new default gateway.	store net gateway <ADDRESS>
		dns	Store a new DNS server address.	store net dns <ADDRESS>
		domain	Store a new DNS domain suffix.	store net domain <STRING>
		opts	Enable or disable automatic address assignment using DHCP. Static (non-automatic) addresses will come from the stored or default settings, depending on the other settings.	To enable automatic address assignment: store net opts dhcp To disable automatic address assignment: store net opts -dhcp
		from	Restore the network settings from either the default settings or the current settings.	store net from default|current
	ifc	mode	Specify the Ethernet interface mode as: automatic, full or half duplex; 10 or 100 mHz.	store ifc mode auto|10half|10full|100half|100full
		from	Set the Ethernet mode settings from the default or current settings.	store ifc from default|current

Reviewing the Telnet Command Table (continued)

Telnet Command	Command Purpose	Command Format
save	Save all current settings as the stored settings in the permanent memory.	save
load	Take the settings from the stored memory and make them the current settings.	load
lpstat	Display information about the Printer status. This includes the status and device response. See the Printer web page description.	lpstat
cancel	Cancel a specific print job from the print queue.	cancel 10
quit	Stop the current Telnet session.	quit

Ethernet Web Pages – Standard Procedures

Reviewing Web page security

You can use the web pages from your Fargo Ethernet-connected Printer to view several attributes about the Printer. Users must have administrative rights, and they must enter the correct password to alter settings of the Printer. See the Reviewing the Web Page Server section.

Logging In

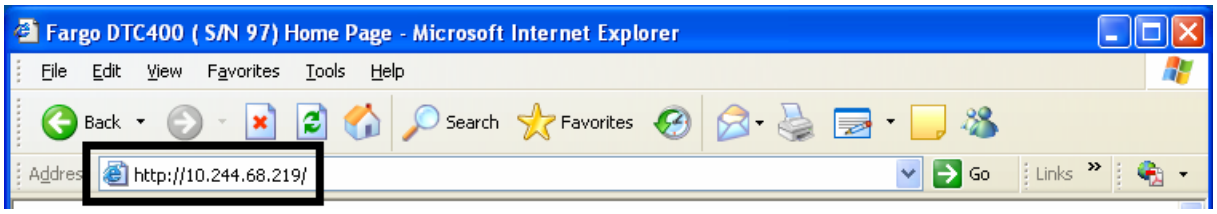
When a User attempts to change any setting, they are asked for a User name and password. (**Note:** The Guest Users can only view settings.)

Step	Procedure
1	Enter the correct User name: • The default administrative User name is **root**. • The default non-administrative User name is **guest**. • Non-administrative Users can only view settings.
2	Enter the correct password: • The default password is an empty string. If the password has not been changed, leave the field blank. • See **Password** page procedure for changing passwords.
3	Press **Enter** or click on the **OK** button.
4	If the name and password is not accepted, another login prompt will appear on screen. Repeat this procedure with the correct User name and password.

Accessing the Home page

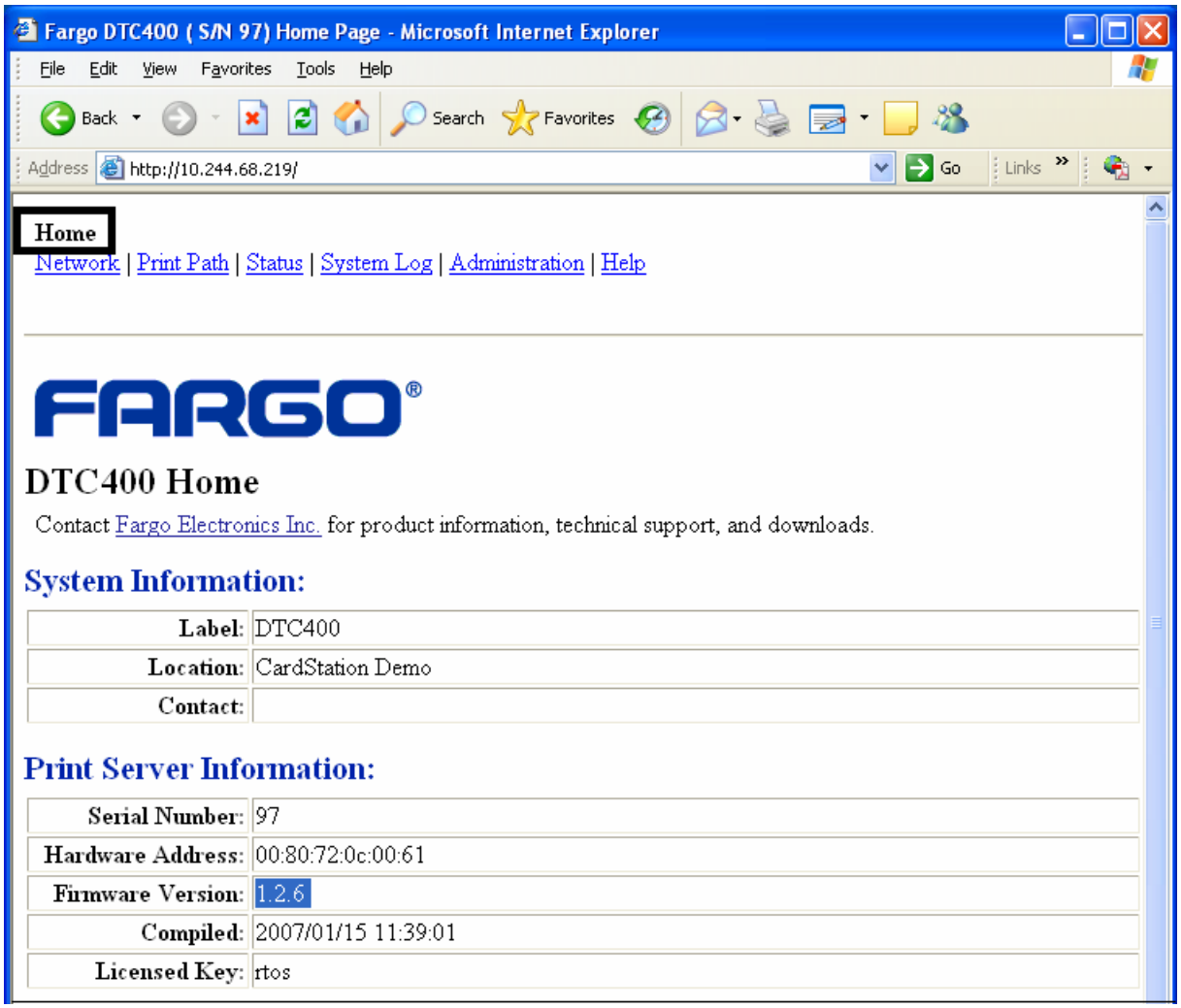
Step	Procedure
1	Open a window for your network browser application on your local PC.
2	Find the IP address of the Printer. (**Note:** See Accessing the DTC400 IP Address as needed to get this from the LCD of the Printer.)
3	Enter the IP address of the Printer you want to access into the address bar of the browser. (**Note:** The IP address will change for your printer installation.)
4	Press **Enter** or click on **GO**.
5	View the Home page. The Home Page displays general information about the Printer. See the next page.

Display – See Procedural Steps 2 and 3 (above)



Reviewing the Home Page

This section displays the DTC400 Home Page. The window title bar will vary according to the serial number assigned to your Printer.



Reviewing the Home Page Categories and Fields (table)

You can view these categories and fields in the following table.

Category	Field	Purpose
Fixed for Printer	Serial Number (Print Server)	Displays the unique fixed serial number of the Print Server.
	Serial Number (Printer)	Displays the unique fixed serial number of the Printer.
	Hardware Address	Displays the unique fixed hardware address (MAC) of the Printer, which is the unique Ethernet device identifier.
Set by User (May be configured via Telnet or from the Administration web page.)	Label	Indicates the label that the User assigns to the Printer. This label is reported to the DHCP server as the Host Name (that may be used by the DNS server to resolve the IP address of the Printer). If left blank, the Printer will use a unique label based on the MAC address of the Printer.
	Location	Indicates the location string that the User assigns to the Printer.
	Contact	Indicates the contact person string that the User assigns to the Printer.
Set by Firmware	Firmware Version (Print Server)	Displays the current Firmware version of the Print Server.
	Firmware Version (Printer)	Displays the current Firmware version of the Printer.

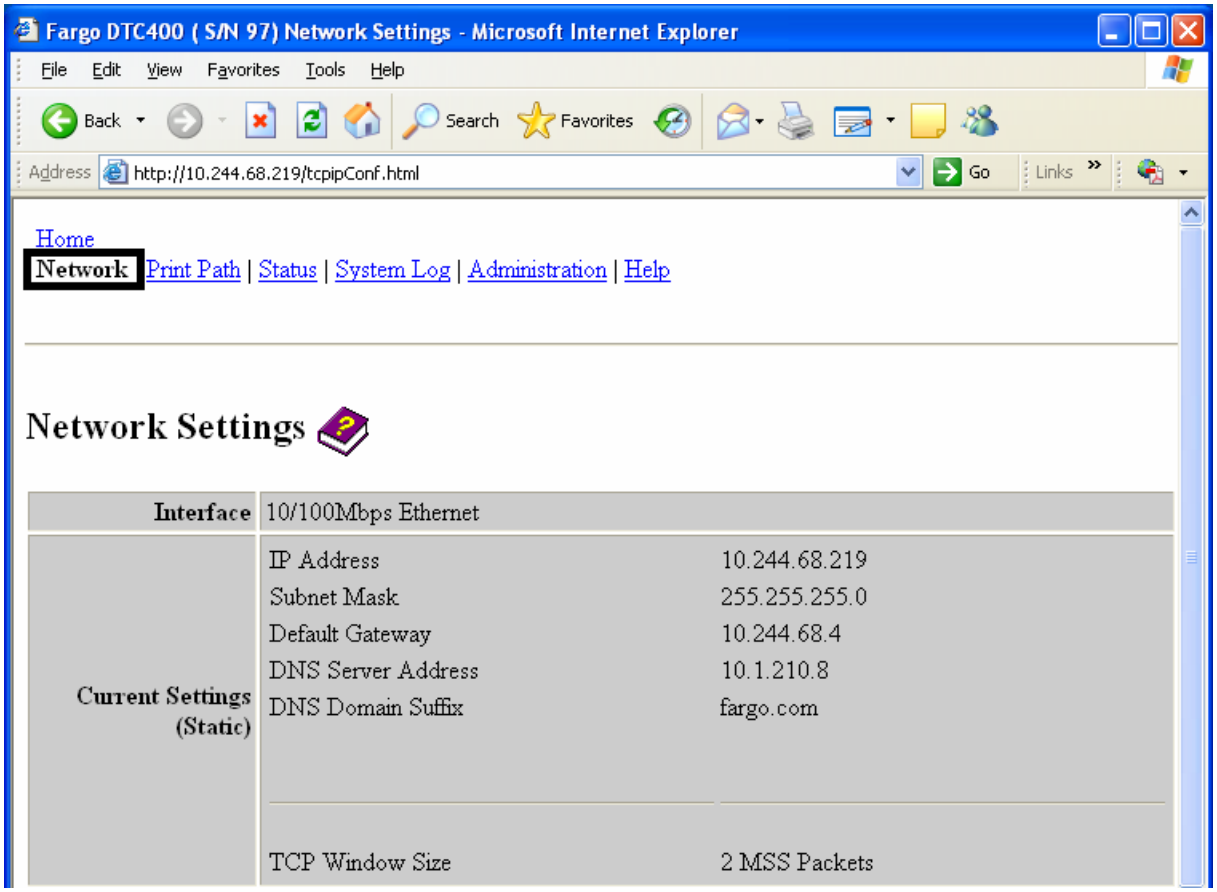
Configuring the Network Settings

The procedures needed to configure the network settings are presented in this section.

Accessing the Network Settings page

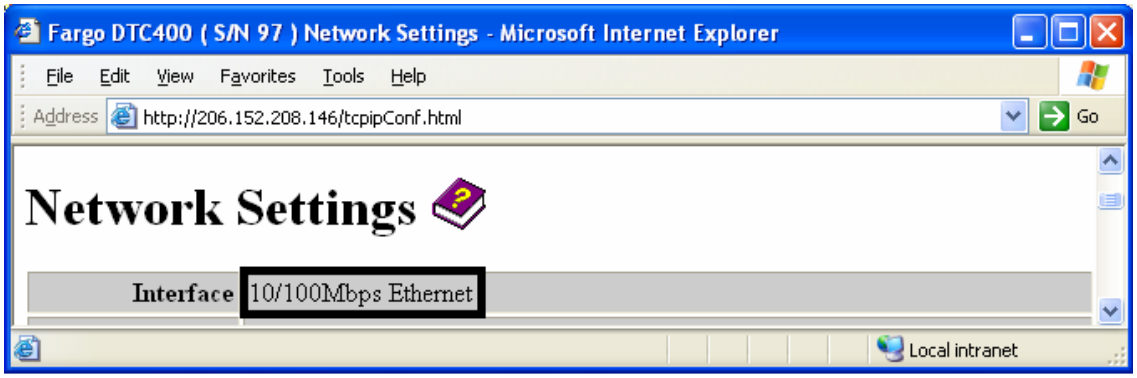
The Network page displays the current network settings and allows the User to change the settings.

Step	Procedure
1	Select the **Network** link from any web page of the Printer.


Fargo DTC400 (S/N 97) Network Settings - Microsoft Internet Explorer
File Edit View Favorites Tools Help
Back Search Favorites
Address http://10.244.68.219/tcpipConf.html
Go Links
Home
Network Print Path | Status | System Log | Administration | Help
Network Settings
Interface 10/100Mbps Ethernet
Current Settings (Static)
IP Address 10.244.68.219
Subnet Mask 255.255.255.0
Default Gateway 10.244.68.4
DNS Server Address 10.1.210.8
DNS Domain Suffix fargo.com
TCP Window Size 2 MSS Packets

Reviewing the Interface

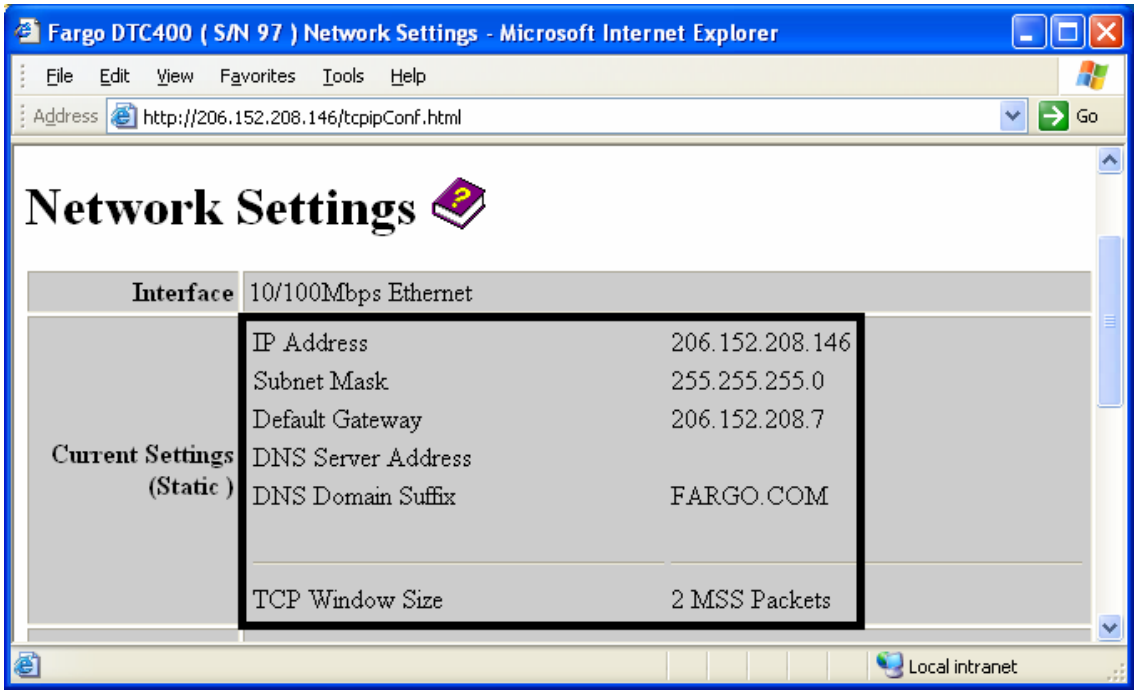
The Interface display indicates the network speed supported by the Printer.


Fargo DTC400 (S/N 97) Network Settings - Microsoft Internet Explorer
File Edit View Favorites Tools Help
Address http://206.152.208.146/tcpipConf.html
Go
Network Settings
Interface 10/100Mbps Ethernet
Local intranet

Reviewing the Current Settings

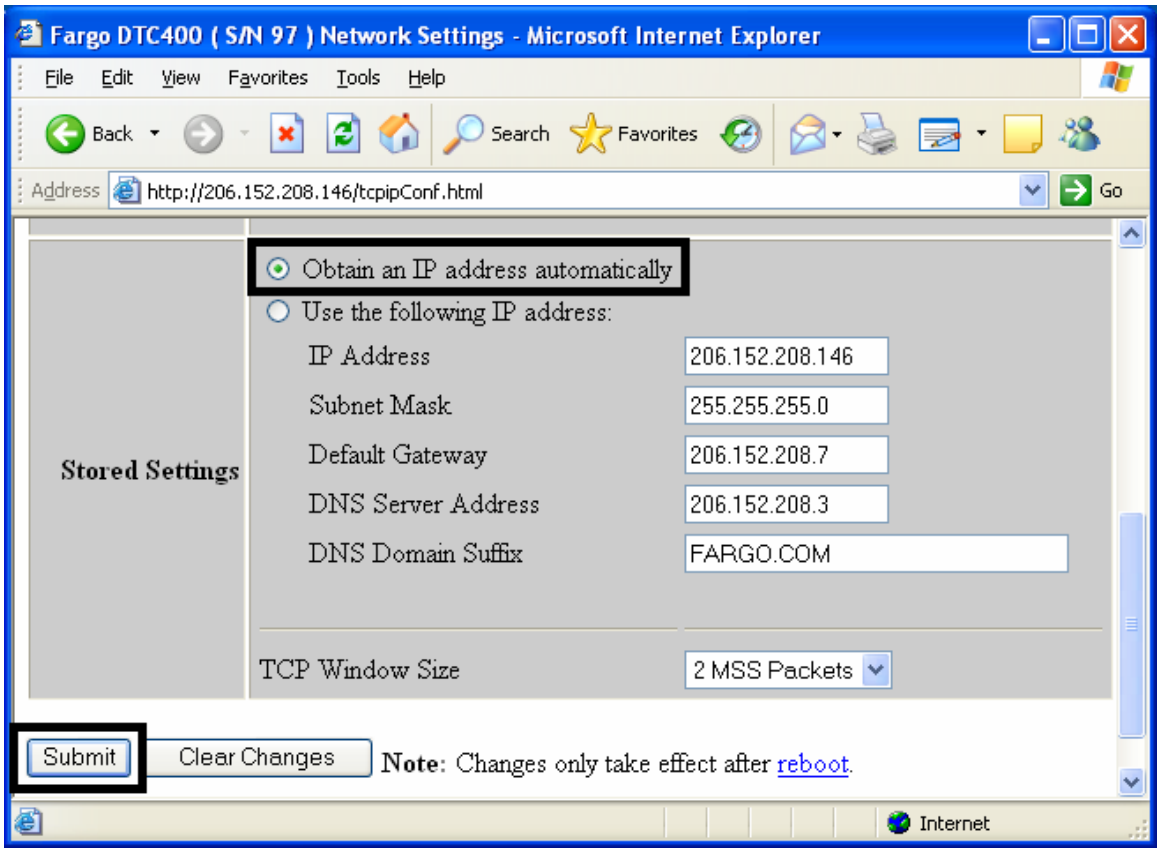
The Current Settings page section displays the current active network settings for the Printer.

- These are also labeled as Dynamic if they were provided by DHCP or Static if they came from the Stored Settings.
- The current settings will be Dynamic only if **Obtain an IP address automatically** was selected when the Printer was restarted last.



Switching to the automatic IP address mode

Step	Procedure
1	Select the **Network** link from any web page of the Printer.
2	Select the **Obtain an IP address automatically** radio button to enable the DHCP/BOOTP, which automatically assigns the network settings. Even with this button selected, the User can enter Stored Settings, and the Stored Settings will remain in memory. See below. (**Note:** This is the default method.)
3	Click on the **Submit** button to save this setting.
4	Log in as a root User if you are so prompted. (**Note:** Any change of setting will only be accepted after you have successfully logged in.)
5	Reboot the Printer to affect this change. See the procedures in Using the Reboot pages.

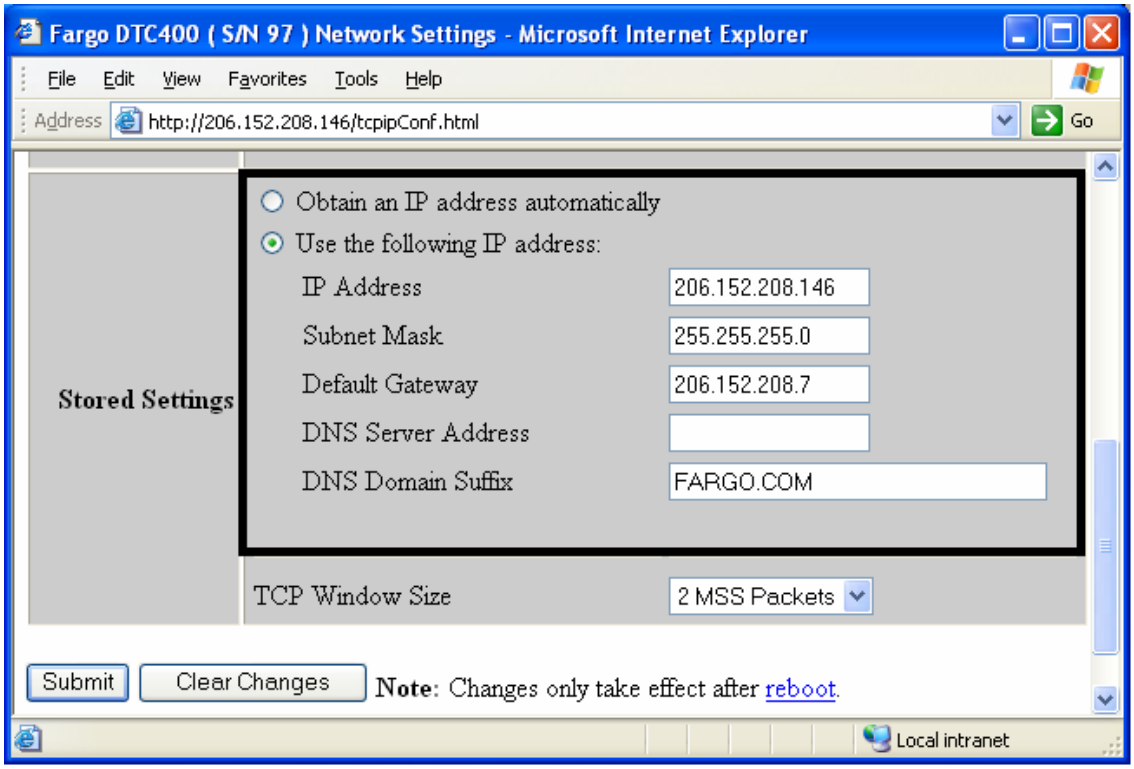


Changing to the static IP address mode

Step	Procedure
1	Select the **Network** link from any web page of the Printer.
2	Select the **Use the following IP address** radio button, which prepares the Printer to use network settings that the User has manually set. These manual settings will then be used the next time the Printer is rebooted.
3	Enter the network settings which are required for Ethernet communications from within the same subnet. With only these entries the User will be unable to print from a subnet other than the subnet on which the Printer is connected. These required settings are the following: • IP Address • Subnet Mask
4	Enter the optional network settings for Ethernet communications across a router from other subnets. The option setting is Default Gateway.
5	Enter the optional network settings for DNS. These are the following: • DNS Server Address • DNS Domain Suffix
6	Select the **Submit** button to save these changes to stored settings in the memory of the Printer. (**Note:** These settings will not be lost if the power is removed from the Printer.)

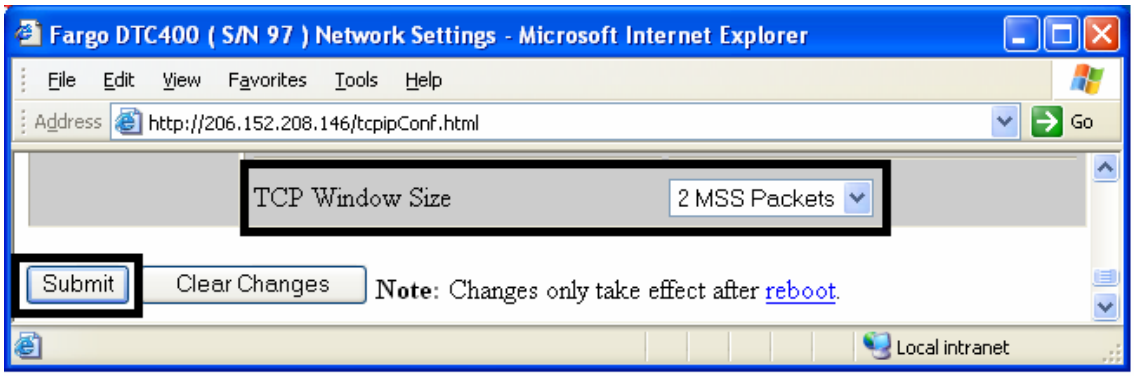
Changing to the static IP address mode (continued)

Step	Procedure
7	Log in as a root User if you are so prompted. (**Note:** Any change of setting will only be accepted after you have successfully logged in.)
8	Reboot the Printer to effect this change. See the Reviewing Web page security procedure.



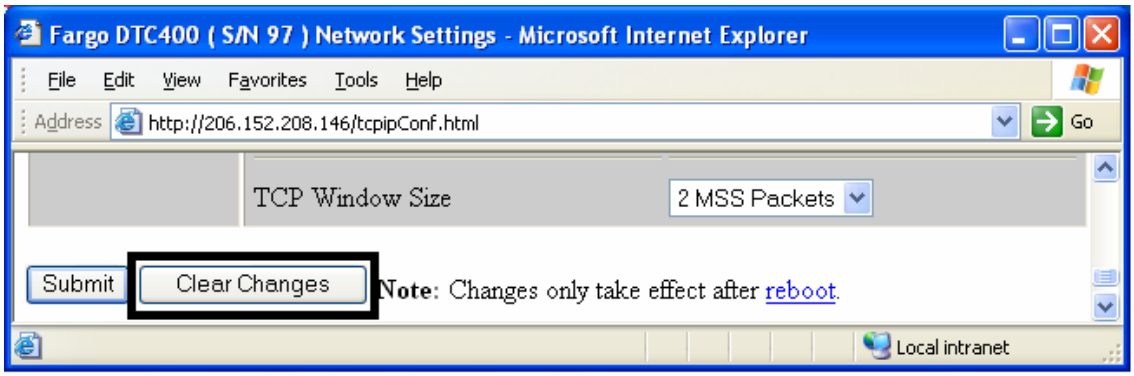
Entering the TCP Window Size

Step	Procedure
1	Select the **Network** link from any web page of the Printer.
2	Select the TCP window size from the drop-down menu, as shown below. • This entry provides for entry of the TCP Window Size. It adjusts how much data can be sent to the Printer at any one time. • It is recommended that the default value of 2 MSS Packets be used to ensure good compatibility with all client applications.
3	Click on the **Submit** button to save this setting.
4	Login as a root User if you are so prompted. (**Note:** Any change of setting will only be accepted after you have successfully logged in.)
5	Reboot the Printer to effect this change. See the Reviewing Web page security procedure.



Using the Clear Changes button

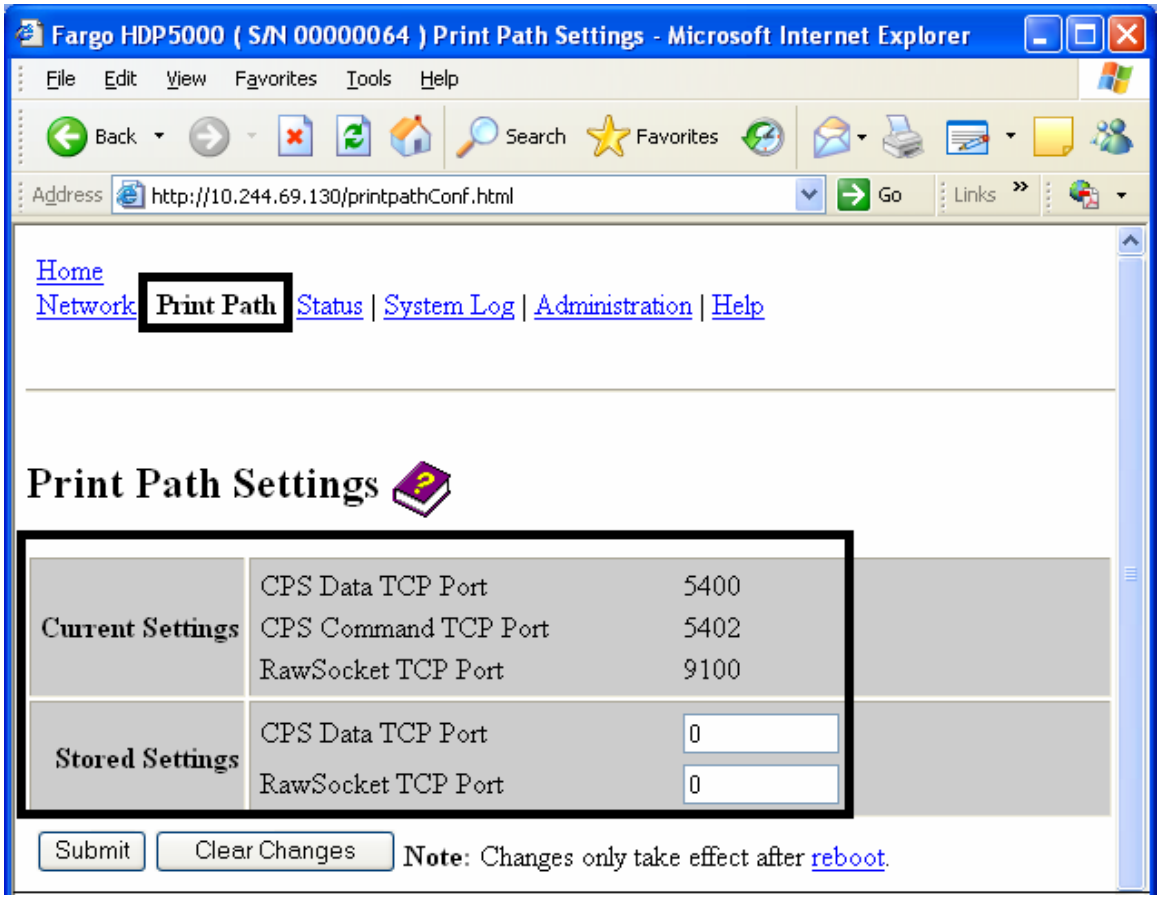
Step	Procedure
1	Click on the **Clear Changes** button to delete the information in the textboxes in Stored Settings area. See the lower left corner of this display.



Using the Print Path page

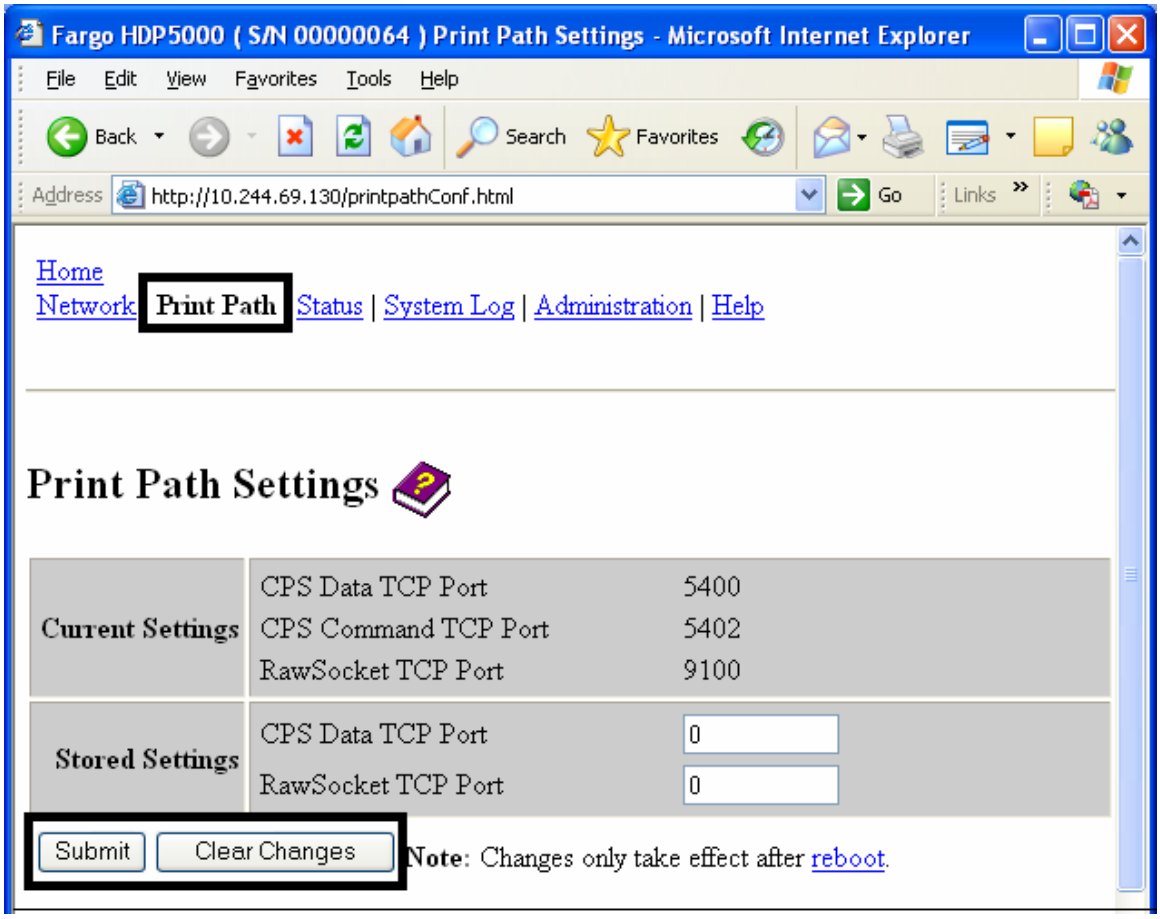
The purpose of the Print Path page is to allow the User to view or change the TCP port numbers used to communicate to the printer. If these settings are left to the default entry of 0 then the default ports of 9100, 5400 and 5402 will be used for the **RawSocket TCP Port**, the **CPS Data TCP Port** and the **CPS Command TCP Port** respectively. The **CPS Command TCP Port** is dependent on the setting of the **CPS Data TCP Port** and always two units higher.

Step	Procedure
1	Select the **Print Path** link.
2	View the active configuration of the printer in the Current Settings area on this page.
3	New port numbers may be entered into the Stored Settings area in the text boxes provided on this page.


Fargo HDP5000 (S/N 00000064) Print Path Settings - Microsoft Internet Explorer
File Edit View Favorites Tools Help
Back Search Favorites
Address http://10.244.69.130/printpathConf.html
Go Links
Home
Network Print Path Status | System Log | Administration | Help
Print Path Settings
Current Settings
CPS Data TCP Port 5400
CPS Command TCP Port 5402
RawSocket TCP Port 9100
Stored Settings
CPS Data TCP Port 0
RawSocket TCP Port 0
Submit
Clear Changes
Note: Changes only take effect after reboot.

Using the Print Path page (continued)

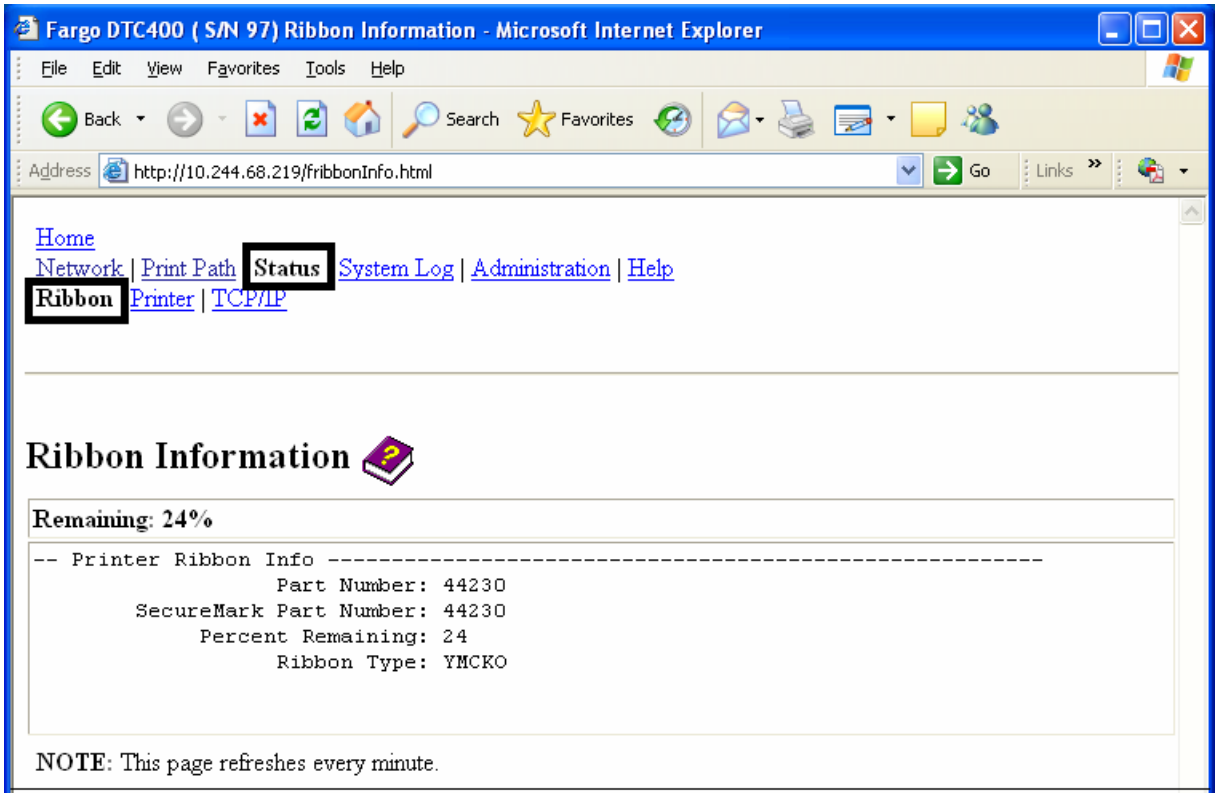
Step	Procedure
4	Select the **Submit** button to save these changes to stored settings in the memory of the Printer. (**Note:** These settings will not be lost if the power is removed from the Printer.)
5	Select the **Clear Changes** button to delete these changes from this page.


Fargo HDP5000 (S/N 00000064) Print Path Settings - Microsoft Internet Explorer
File Edit View Favorites Tools Help
Back Search Favorites
Address http://10.244.69.130/printpathConf.html
Go Links
Home
Network Print Path Status | System Log | Administration | Help
Print Path Settings
Current Settings
CPS Data TCP Port 5400
CPS Command TCP Port 5402
RawSocket TCP Port 9100
Stored Settings
CPS Data TCP Port 0
RawSocket TCP Port 0
Submit Clear Changes
Note: Changes only take effect after reboot.

Using the Ribbon Information page

The Ribbon page displays Ribbon information about the Ribbon (currently installed in the Printer).

Step	Procedure
1	Select the **Status** link from any web page of the Printer.
2	Select the **Ribbon** page link.
3	View currently-installed Ribbon information pertaining to the following: • Part Number • SecureMark Part Number • Percent Remaining • Ribbon Type


Fargo DTC400 (S/N 97) Ribbon Information - Microsoft Internet Explorer
File Edit View Favorites Tools Help
Back Search Favorites
Address http://10.244.68.219/fribbonInfo.html
Go Links
Home
Network | Print Path | Status | System Log | Administration | Help
Ribbon | Printer | TCP/IP
Ribbon Information
Remaining: 24%
-- Printer Ribbon Info ----------
Part Number: 44230
SecureMark Part Number: 44230
Percent Remaining: 24
Ribbon Type: YMCKO
NOTE: This page refreshes every minute.

Using the TCP/IP page

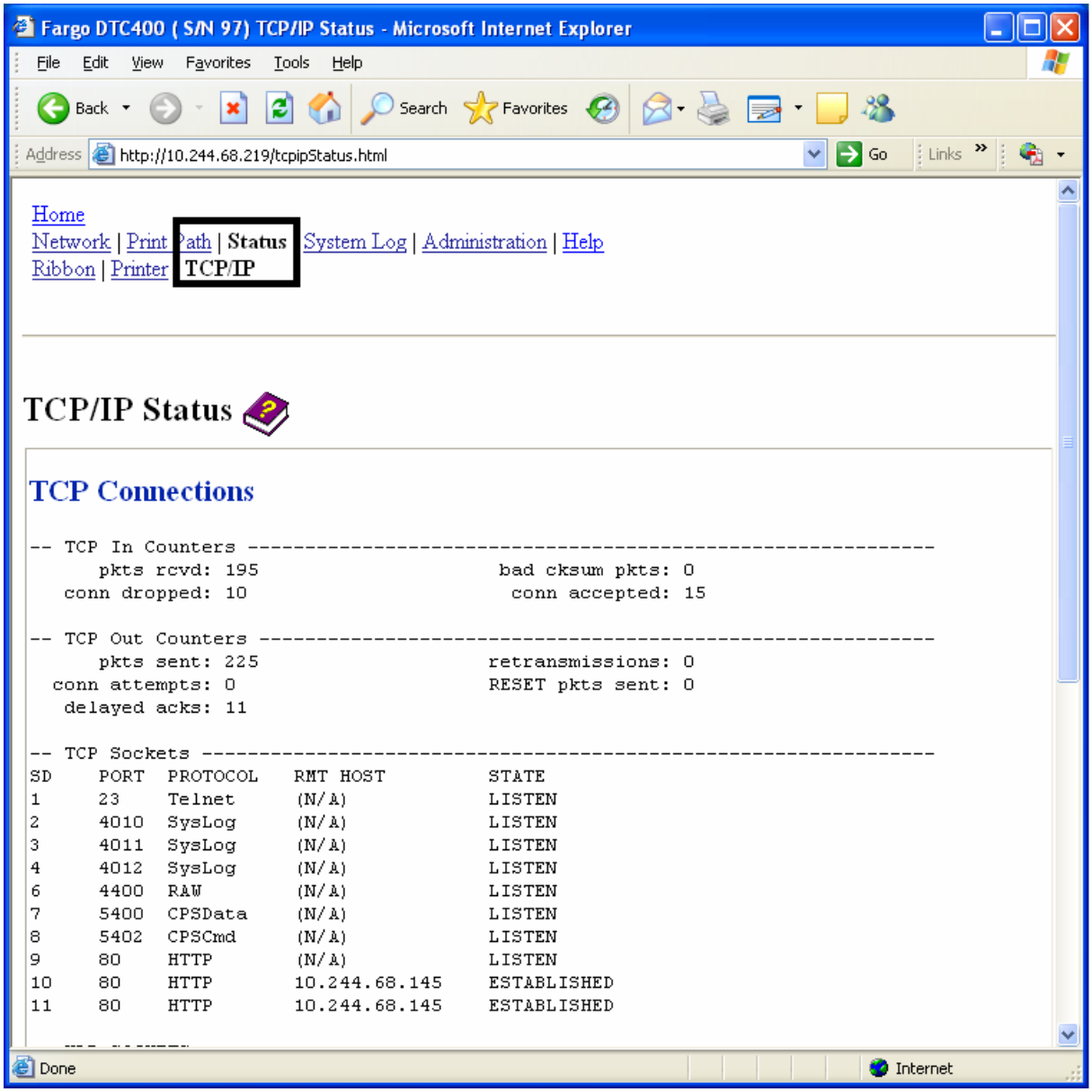
The TCP/IP page displays the TCP/IP Status of each Printer connection, which are not configurable. See the next two pages for displays.

Step	Procedure
1	Select the **Status** link from any web page of the Printer.
2	Select the **TCP/IP** page link.
3	View information on all current network connections in the **TCP connections** area.
4	Review information on the network DHCP status in the **DHCP Information** area.

Continued on the next page

Using the TCP/IP Status Web Page

See the Using the TCP/IP page procedure on the previous page.


Fargo DTC400 (S/N 97) TCP/IP Status - Microsoft Internet Explorer
File Edit View Favorites Tools Help
Back Search Favorites
Address http://10.244.68.219/tcpipStatus.html
Go Links
Home
Network | Print Path | Status | System Log | Administration | Help
Ribbon | Printer TCP/IP
TCP/IP Status
TCP Connections
-- TCP In Counters
pkts rcvd: 195
bad cksum pkts: 0
conn dropped: 10
conn accepted: 15
-- TCP Out Counters
pkts sent: 225
retransmissions: 0
conn attempts: 0
RESET pkts sent: 0
delayed acks: 11
-- TCP Sockets
SD PORT PROTOCOL RMT HOST STATE
1 23 Telnet (N/A) LISTEN
2 4010 SysLog (N/A) LISTEN
3 4011 SysLog (N/A) LISTEN
4 4012 SysLog (N/A) LISTEN
6 4400 RAW (N/A) LISTEN
7 5400 CPSData (N/A) LISTEN
8 5402 CPSCmd (N/A) LISTEN
9 80 HTTP (N/A) LISTEN
10 80 HTTP 10.244.68.145 ESTABLISHED
11 80 HTTP 10.244.68.145 ESTABLISHED
Done
Internet

Using the Printer page

You can use the Printer page to review current information about the Printer device settings and print jobs. Device settings includes the following:

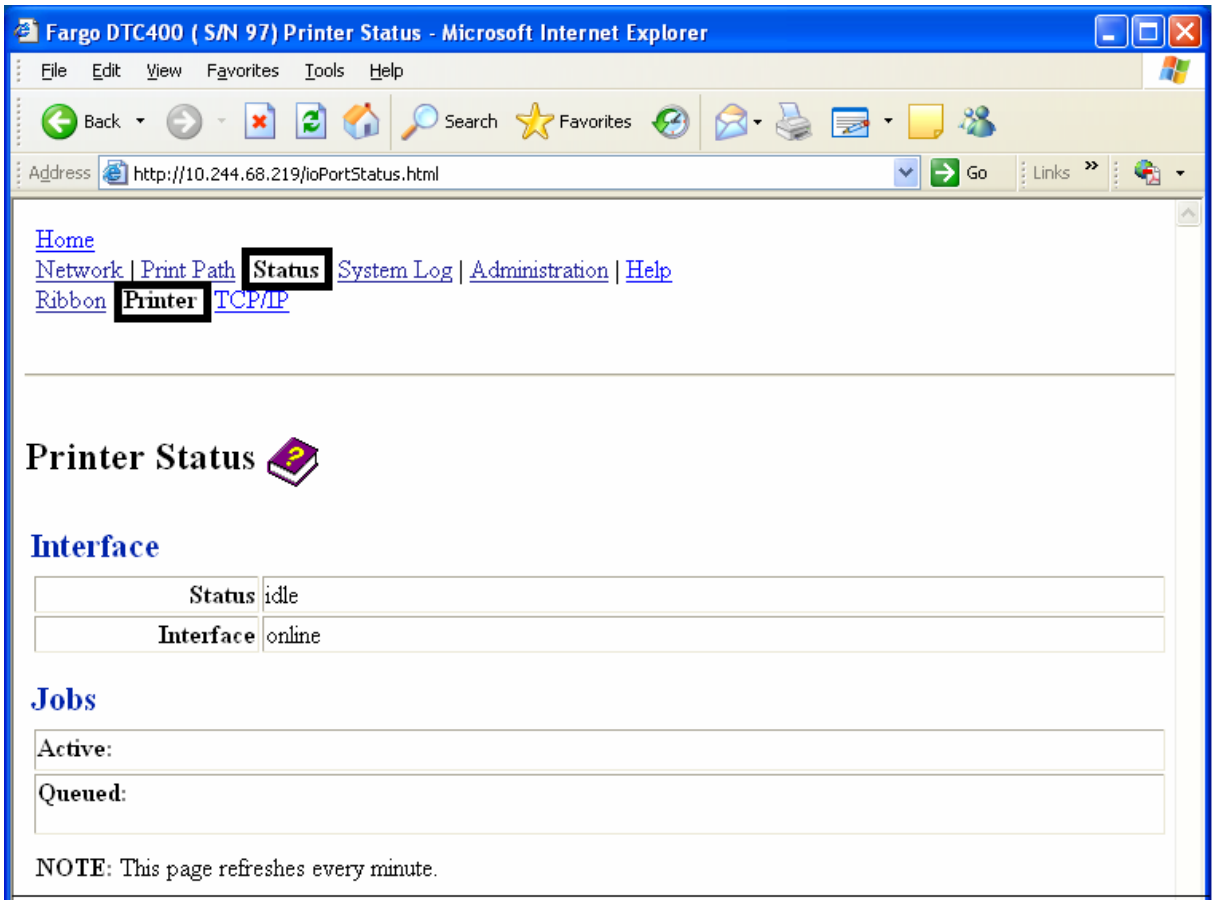
- The **status** which displays information about the current print job.
- The **device** which displays information about the Printer.

The fields are described below. See the next page to view the entire Printer page.

Field	Status	Description
status	Idle	Indicates that no print job is active.
	printing	Indicates that the job is being sent to the Printer.
	printing – waiting	Indicates that the communication is being slowed by print operations.
	printing – blocked	Indicates that the communication has been stopped by some condition.
	canceled	Indicates that the current job was canceled and is being deleted.
device	online	Indicates it is ready to print.
	offline	Indicates that the Cover is open or the Printer is not ready to print.
	printer – error	Indicates that an error is detected.
	Busy	Indicates that printing is in progress.
Print Jobs		This is a display of the current print jobs that have been sent to the Printer. (**Note:** The current job that is being received by the interface is displayed as the active job.) Cancel a specific print job by selecting the appropriate **Cancel** button, which appears when a print job is queued.

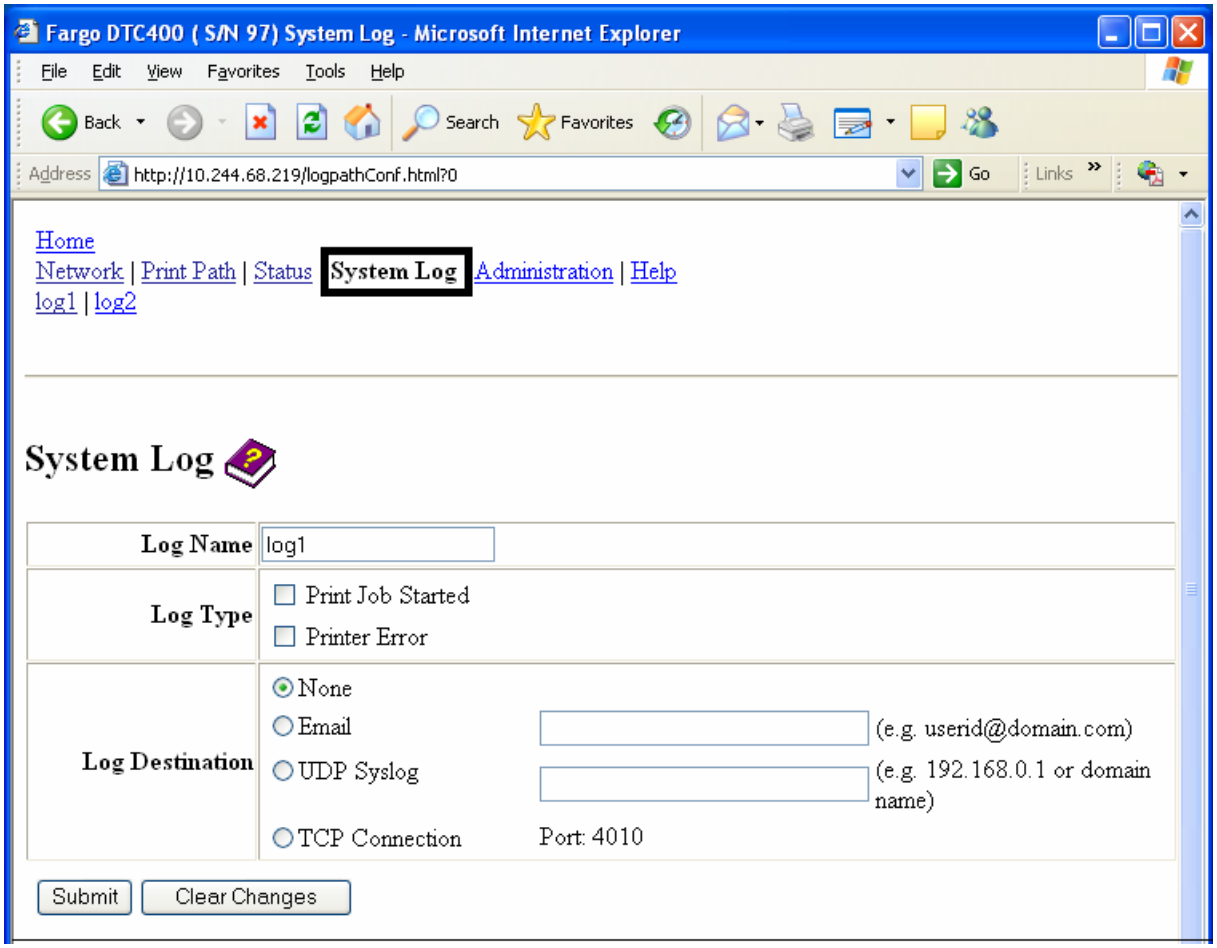
Reviewing the Printer page (continued)

See the previous page for descriptions of the fields.



Using the System Log page

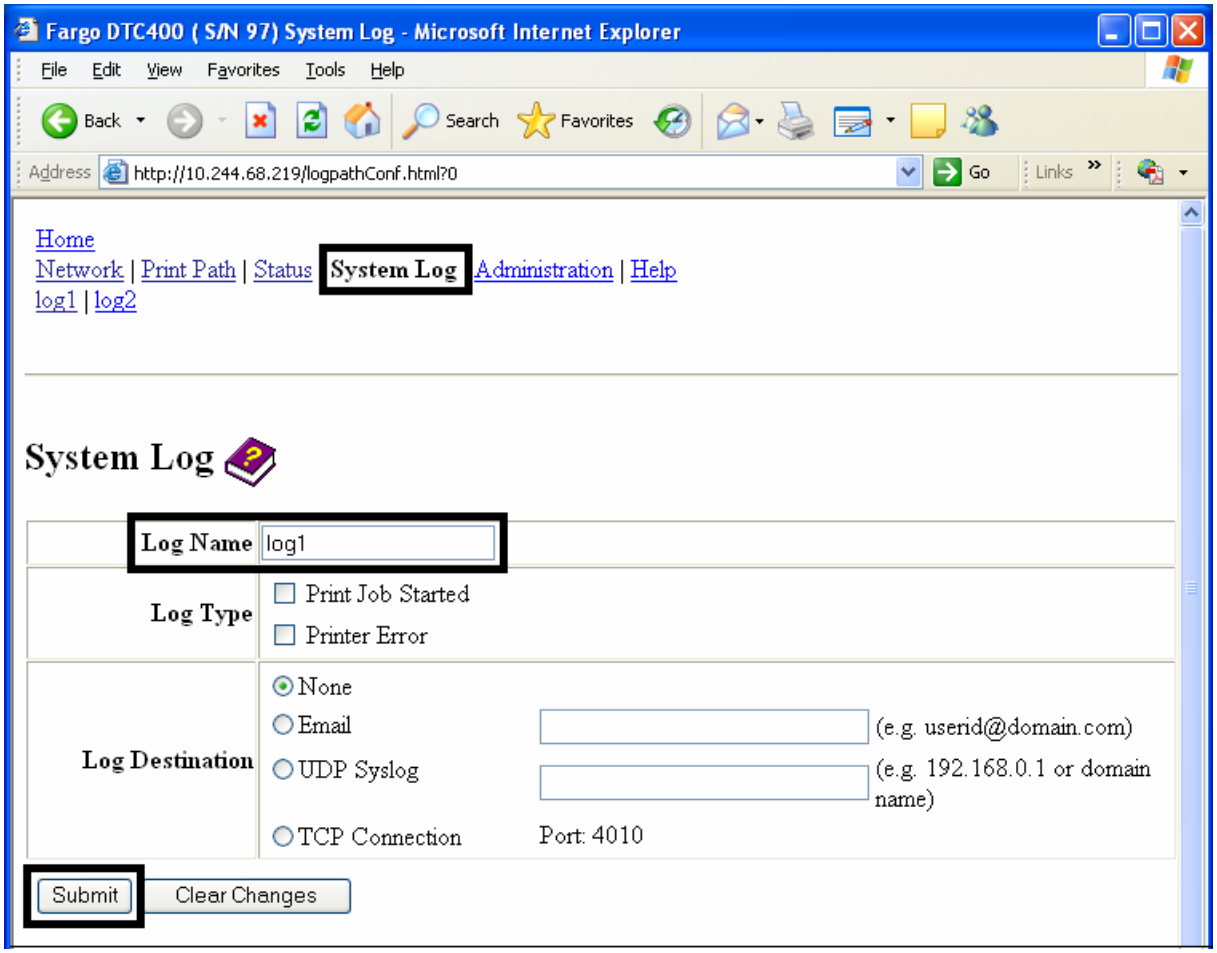
The System Log page displays the current system log settings and allows the User to change the settings. (**Note:** These settings configure how system logging occurs. There are two logs.)



Changing the Log Name

By default the names are log1 and log2. However, you can rename them from this page. (**Note:** This also updates the link to the corresponding web page.)

Step	Procedure
1	Select the **System Log** link.

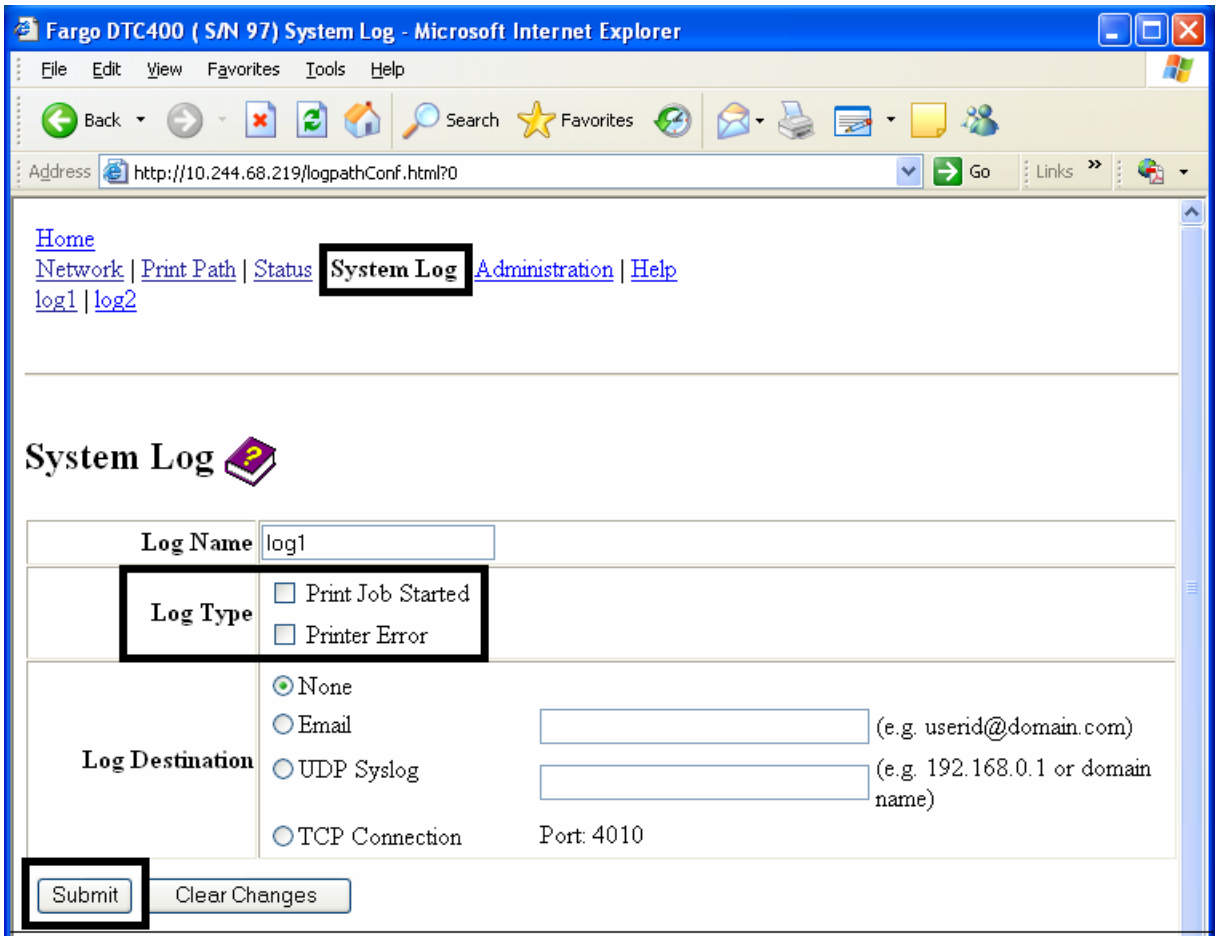


Changing the Log Name (continued)

Step	Procedure
2	Select the link for the log name you want to view or configure (the default choices are **log1** or **log2**). See the previous page.
3	Enter a new log name in textbox.
4	Click on the **Submit** button to save this change.
5	Log in as a root User if you are so prompted. (**Note:** Any change of setting will only be accepted after you have successfully logged in.)

Selecting the Log Type

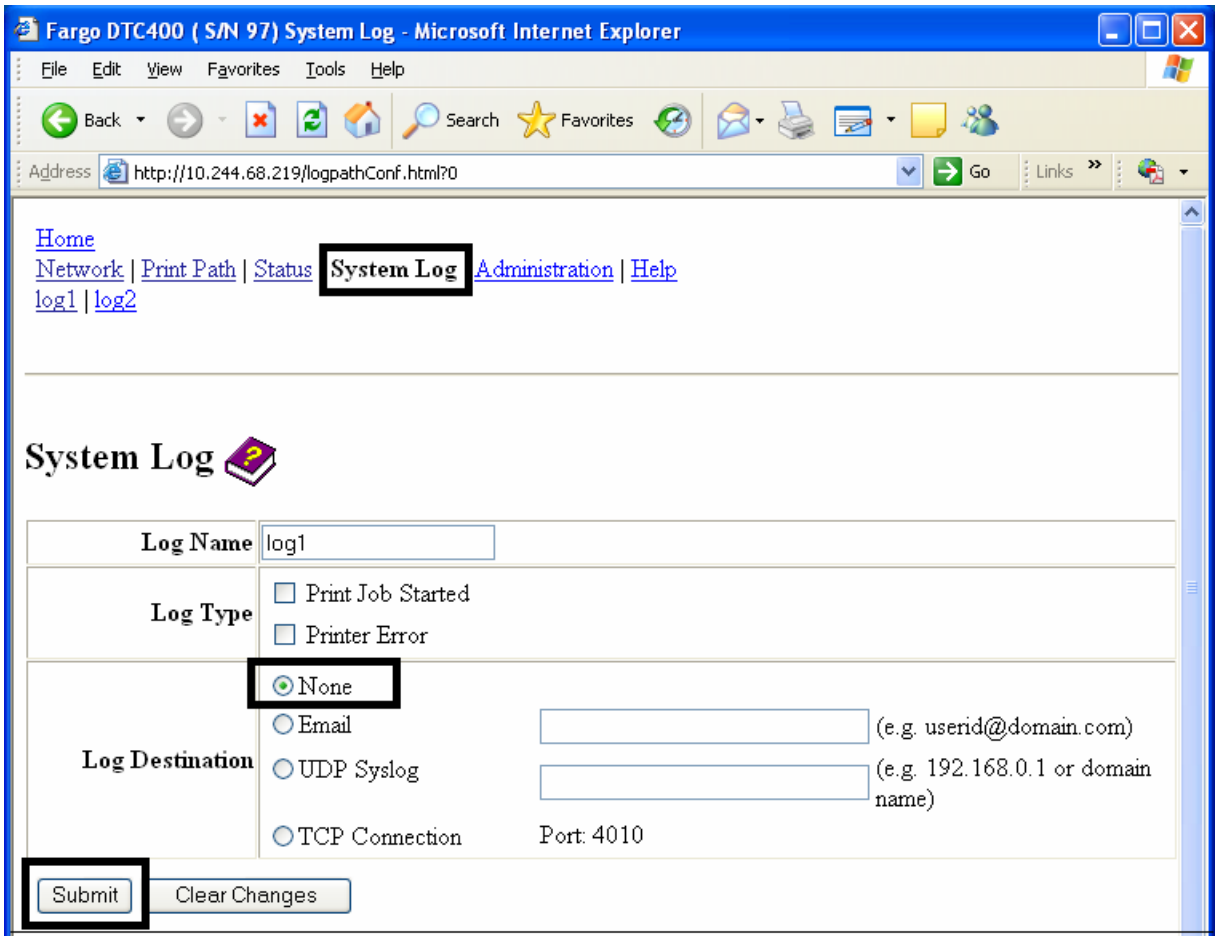
Step	Procedure
1	Select the **System Log** link. See the next page.
2	Select the link for the log name you want to view or configure (the default choices are **log1** or **log2**).
3	Select the **Print Job Started** checkbox to generate the log entries for each Print Job Started.
4	Select the **Printer Error** checkbox to generate the log entries for each Printer Error.
5	Select the **Submit** button.
6	Login as a root User if you are so prompted. (**Note:** Any change of setting will only be accepted after you have successfully logged in.)



Selecting the Log Destination

Specify one destination for the log.

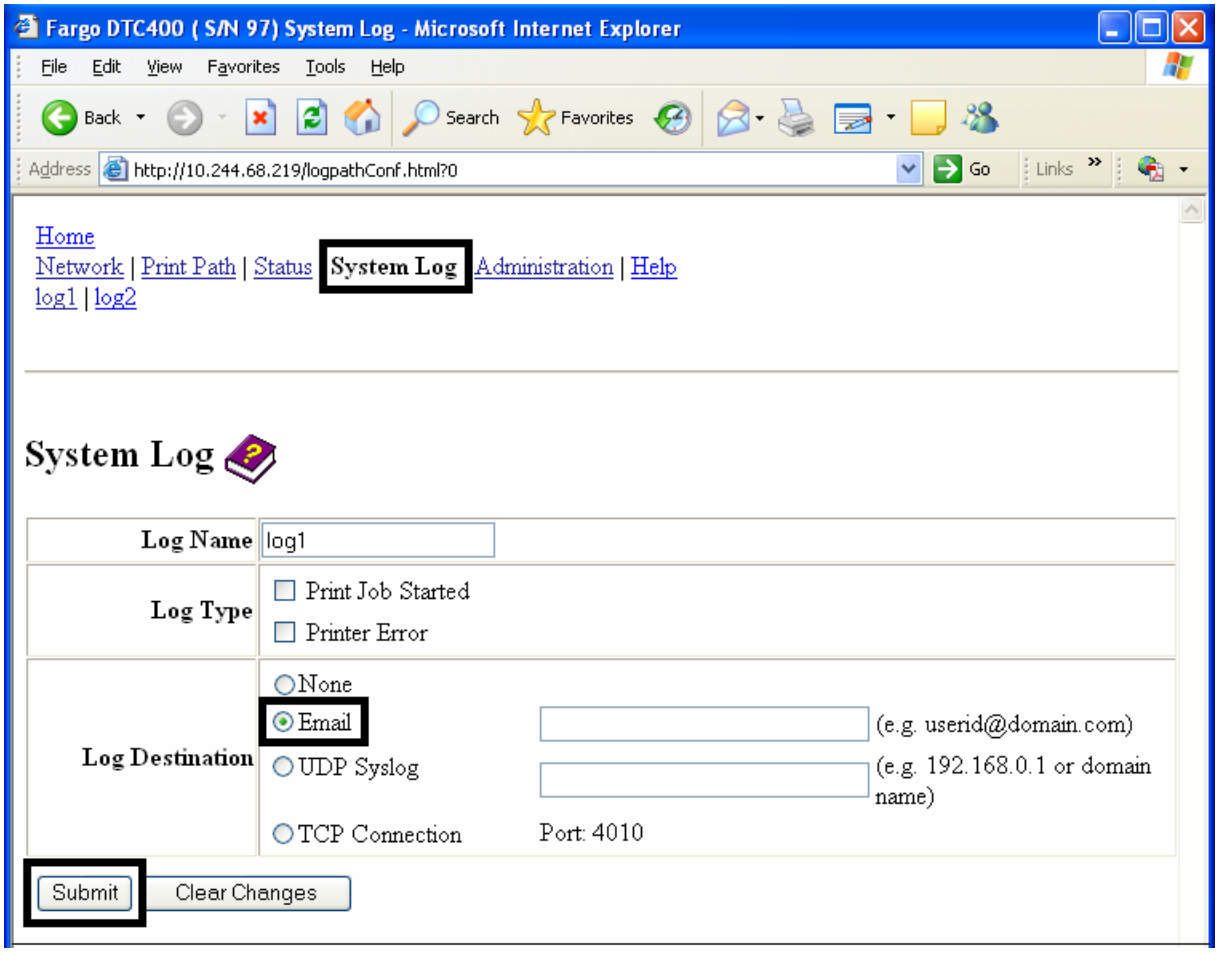
Step	Procedure (No event logging)
1	Select the **System Log** link.
2	Select the link for the log name you want to view or configure (the default choices are **log1** or **log2**).
3	Select the **None** radio button when no log is required. (**Note:** This is the default.)
4	Select **Submit**.
5	Login as a root User if you are so prompted. (**Note:** Any change of setting will only be accepted after you have successfully logged in.)



Setting up Email Event logging

Follow this procedure to enable logging using email notification:

Step	Procedure (Specify email logging)
1	Select the **System Log** link.
2	Select the link for the log name you want to view or configure (the default choices are **log1** or **log2**).
3	Select the **Email** radio button to choose email log notification.
4	Enter a valid e-mail address in the associated textbox.
5	Select **Submit**.
6	Log in as a root User if you are so prompted. (**Note:** Any change of setting will only be accepted after you have successfully logged in.)



Specifying UDP Event logging

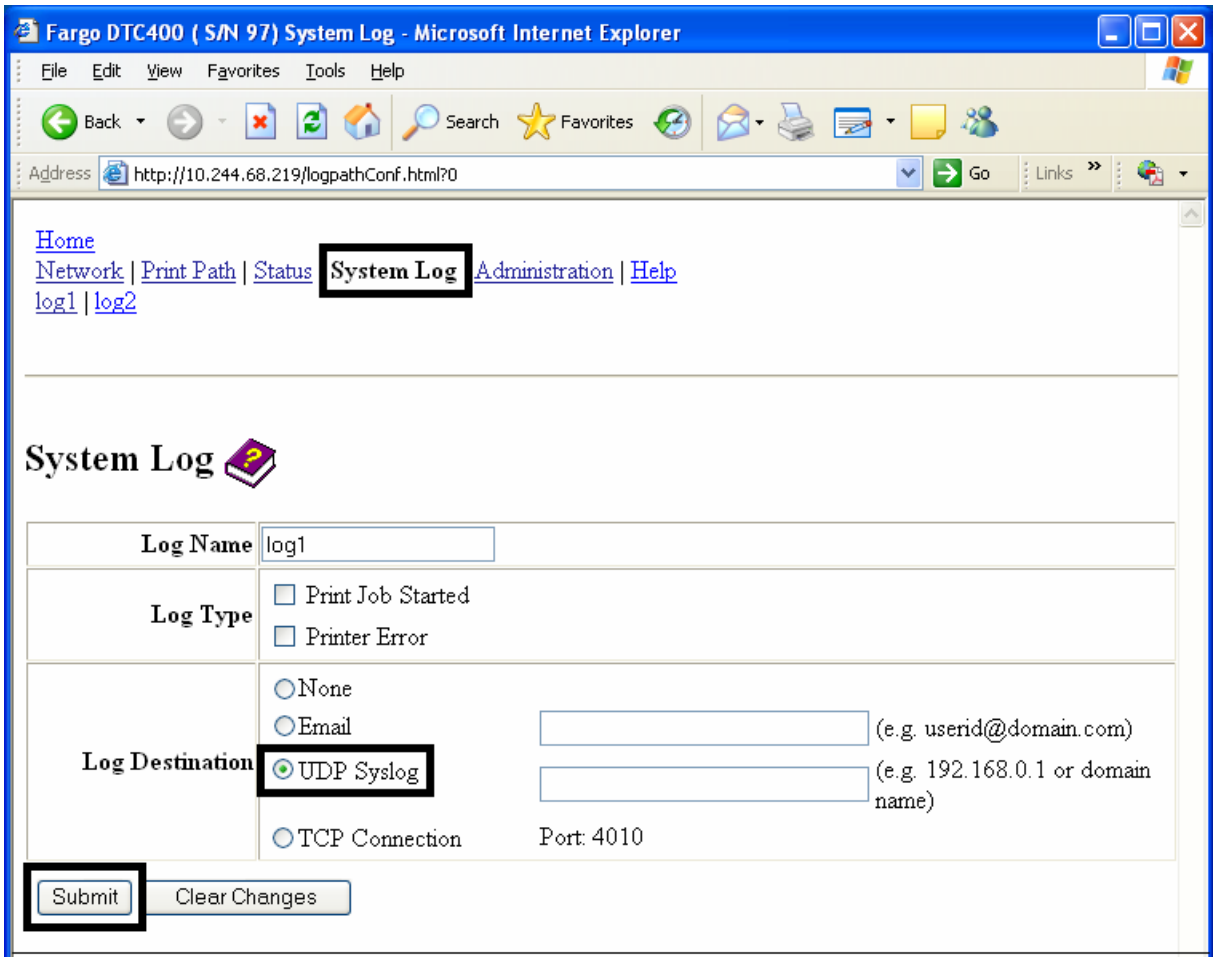
Follow this procedure to enable logging to a UDP Syslog program.

Step	Procedure
1	Select the **System Log** link. • The messages will be sent via UPD packets to the Syslog port (514) of the specified host. • It is up to the host program to listen to these messages for processing. • A syslog host program is necessary to use this method, such as, Kiwi Syslog Daemon or WinSysLog.
2	Select the link for the log name you want to view or configure (the default choices are **log1** or **log2**).
3	Select the **UDP Syslog** radio button.
4	Enter a valid IP address or domain name.

Continued on the next page

Specifying UDP Event logging

Step	Procedure
5	Select **Submit**.
6	Log in as a root User if you are so prompted. (**Note:** Any change of setting will only be accepted after you have successfully logged in.)

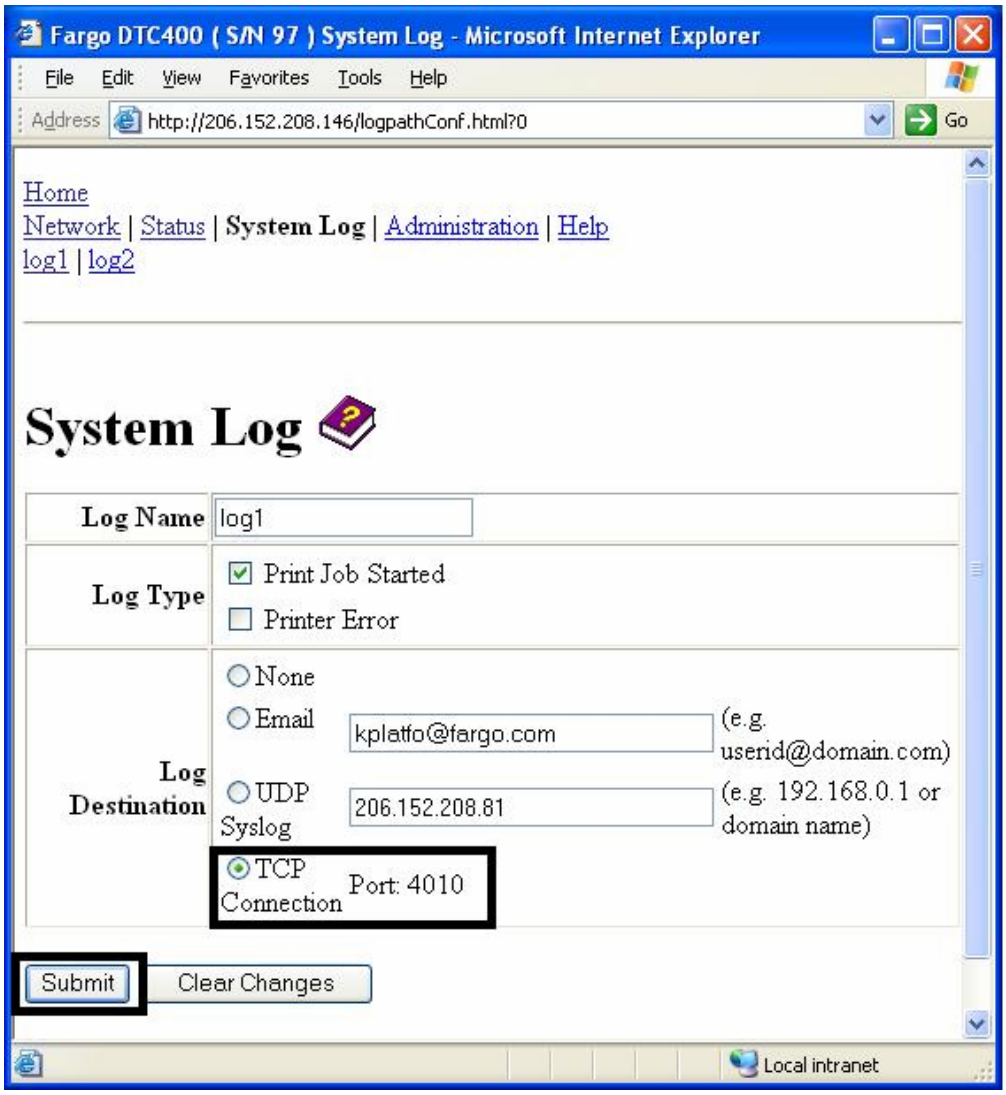


Specifying TCP Event logging

Follow this procedure to send logging messages to a pre-existing IP connection made on the TCP port.

Step	Procedure
1	Select the **System Log** link.
2	Select the link for the log name you want to view or configure (the default choices are **log1** or **log2**).

Continued on the next page

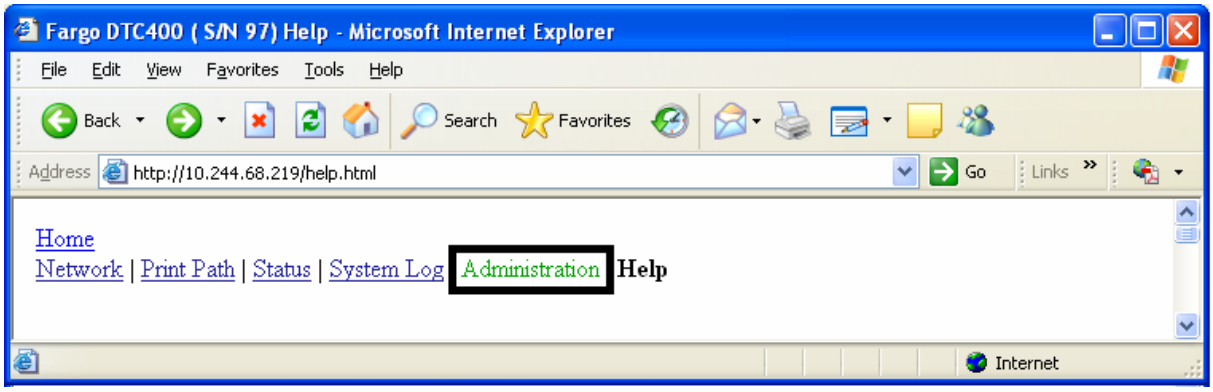


Specifying TCP Event logging (continued)

Step	Procedure
3	Select the **TCP Connection** radio button. See previous page.
4	Select **Submit**.
5	Log in as a root User if you are so prompted. Any change of setting will only be accepted after you have successfully logged in.
6	Use a host program such as Telnet to receive these TCP logging messages (**Note:** Other programs such as HyperTerminal are also used to monitor TCP connections). See below. • **Telnet Client:** You can use a Telnet client connected to the TCP port (log1 = 4010, log2 = 4011) rather than the default Telnet port (23). • **Telnet Session:** If there is a Printer at IP address 192.37.23.155 (and you have configured log1 for TCP logging), then you could initiate a Telnet session from a DOS window of a PC by entering Telnet 192.37.23.155 4010. • **Log Messages:** All system log messages would then be displayed in that Telnet session window. (**Note:** This is a one way connection for logging only. Any input to the Printer on this connection is ignored.)

Using the Administration pages

The purpose of the Administration pages is to allow the User to upgrade, reboot, modify passwords and enter User-specified system information strings.


Fargo DTC400 (S/N 97) Help - Microsoft Internet Explorer
File Edit View Favorites Tools Help
Back Search Favorites
Address http://10.244.68.219/help.html
Go Links
Home
Network | Print Path | Status | System Log Administration Help
Internet

Using the System Information page

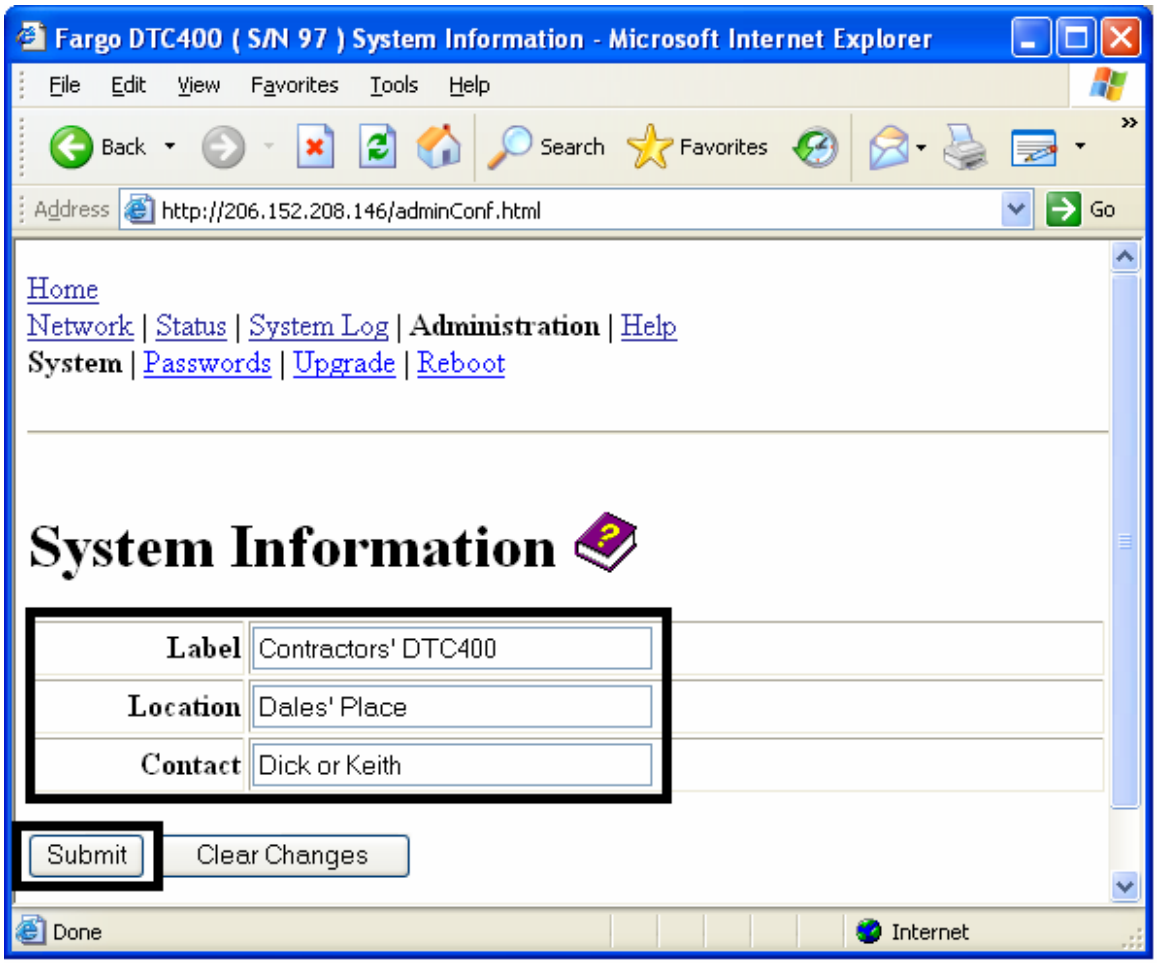
The System Information page displays the current system information and allows the User to change the system information (which appears on the Home page). See the Using the Home page for definitions.

Step	Procedure
1	Select the **Administration** link.
2	Select the link for the **System** web page.
3	To change an attribute, type the new entry in one of these boxes: • **Label** textbox • **Location** textbox • **Contact** textbox

Continued on the next page

Using the System Information page (continued)

Step	Procedure
4	Select the **Submit** button.
5	Log in as a root User if you are so prompted. Any change of setting will only be accepted after you have successfully logged in.



Changing the Root Password

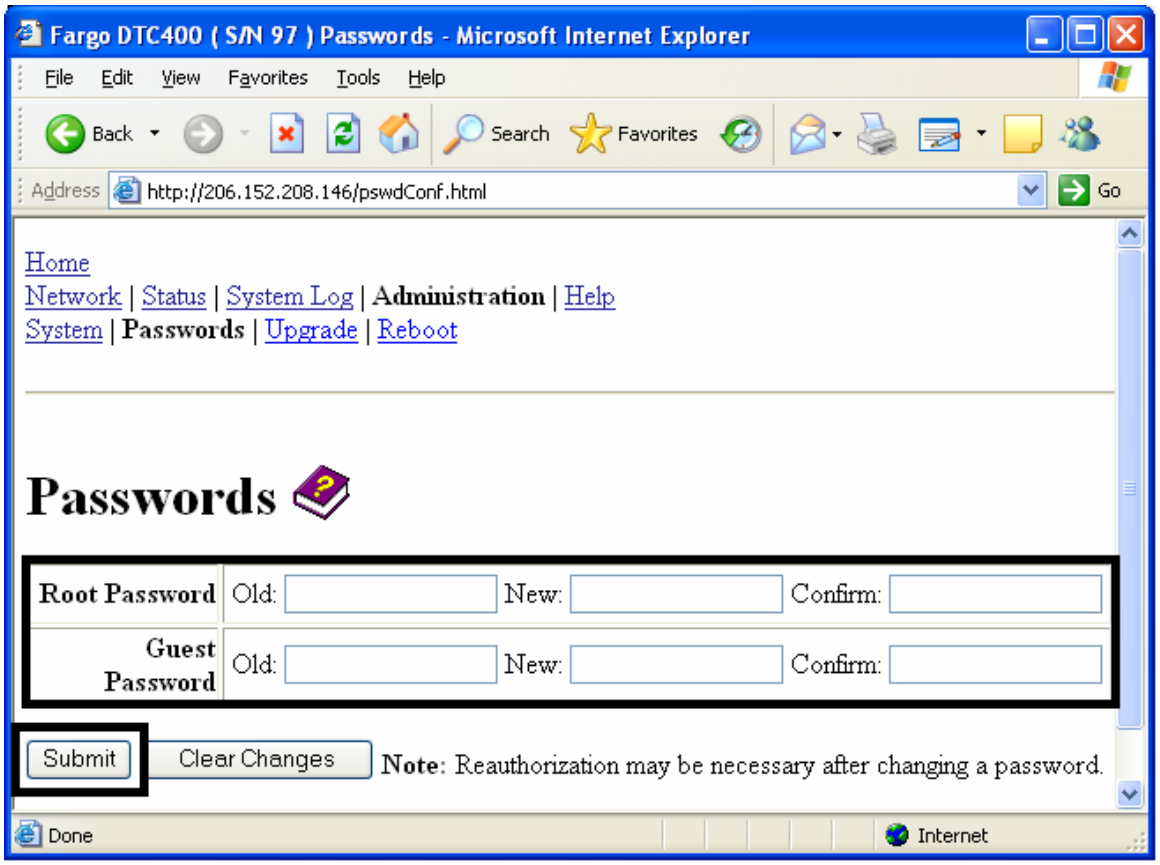
The Passwords page allows the User to change the passwords needed to log in as a User. Changes to all settings require a login. (**Note:** However, these changes are only protected by password after the password has been set. Users can only be added or removed using Telnet commands.)

Step	Procedure
1	Select the **Administration** link.
2	Select the **Passwords** link to get to the Password web page.
3	Enter the current password in the **Root Password Old** textbox or leave it blank if no password has been previously set.
4	Enter the new password in the **Root Password New** textbox or leave it blank if you want to remove the old password.
5	Re-enter the new password in the **Root Password Confirm** textbox or leave it blank if you want to remove the old password.

Continued on the next page

Changing the Root Password (continued)

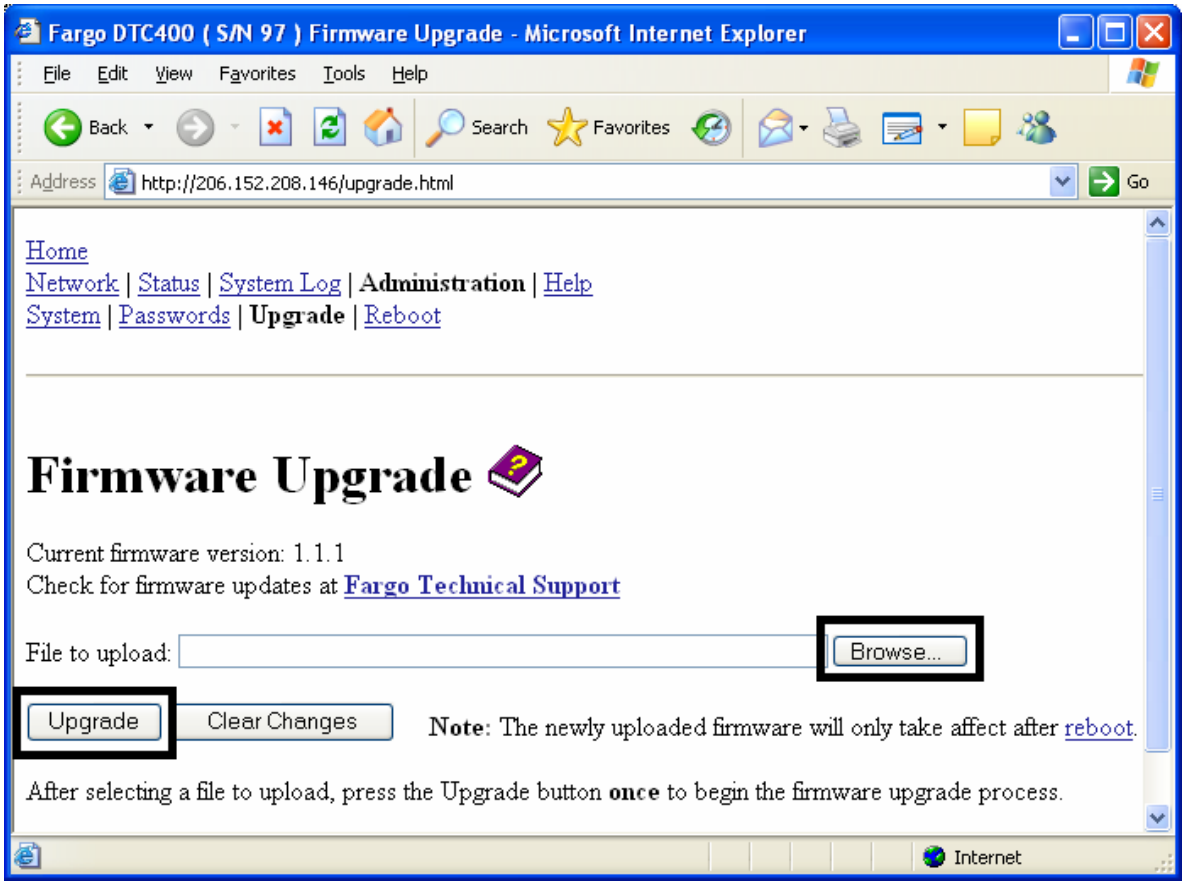
Step	Procedure
6	Select the **Submit** button.
7	Log in as a root User (using the password) if you are so prompted. (**Note:** Any change of setting will only be accepted after you have successfully logged in.)


Fargo DTC400 (S/N 97) Passwords - Microsoft Internet Explorer
File Edit View Favorites Tools Help
Back Search Favorites
Address http://206.152.208.146/pswdConf.html
Go
Home
Network | Status | System Log | Administration | Help
System | Passwords | Upgrade | Reboot
Passwords
Root Password Old: New: Confirm:
Guest Password Old: New: Confirm:
Submit
Clear Changes
Note: Reauthorization may be necessary after changing a password.
Done
Internet

Upgrading the Print Server

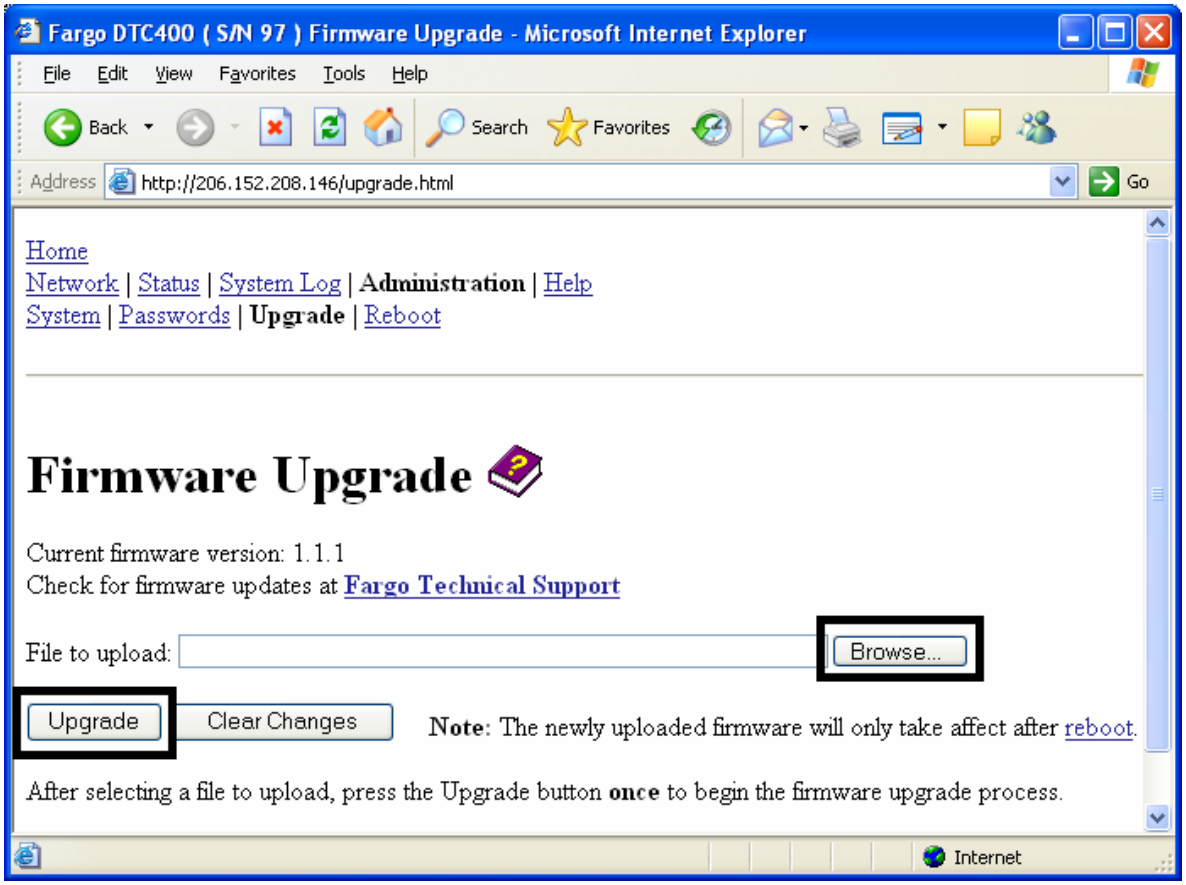
This procedure provides a means to upgrade the Firmware in the Printer Server not the main Printer.

Step	Procedure
1	Select the **Administration** link.
2	Log in as a root User (using the password) if you are so prompted. (**Note:** Any change of setting will only be accepted after you have successfully logged in.)
3	Select the **Upgrade** link.
4	Select the **Browse** button.
5	Navigate to and select the appropriate file to upload.


Fargo DTC400 (S/N 97) Firmware Upgrade - Microsoft Internet Explorer
File Edit View Favorites Tools Help
Back Search Favorites
Address http://206.152.208.146/upgrade.html
Go
Home
Network | Status | System Log | Administration | Help
System | Passwords | Upgrade | Reboot
Firmware Upgrade
Current firmware version: 1.1.1
Check for firmware updates at Fargo Technical Support
File to upload:
Browse...
Upgrade
Clear Changes
Note: The newly uploaded firmware will only take affect after reboot.
After selecting a file to upload, press the Upgrade button once to begin the firmware upgrade process.
Internet

Upgrading the DTC400 and HDP600 Print Server (continued)

Step	Procedure
6	Select the **Upgrade** button to start the Firmware upload.
7	Select **Reboot** when requested.


Fargo DTC400 (S/N 97) Firmware Upgrade - Microsoft Internet Explorer
File Edit View Favorites Tools Help
Back Search Favorites
Address http://206.152.208.146/upgrade.html
Go
Home
Network | Status | System Log | Administration | Help
System | Passwords | Upgrade | Reboot
Firmware Upgrade
Current firmware version: 1.1.1
Check for firmware updates at Fargo Technical Support
File to upload:
Browse...
Upgrade
Clear Changes
Note: The newly uploaded firmware will only take affect after reboot.
After selecting a file to upload, press the Upgrade button once to begin the firmware upgrade process.
Internet

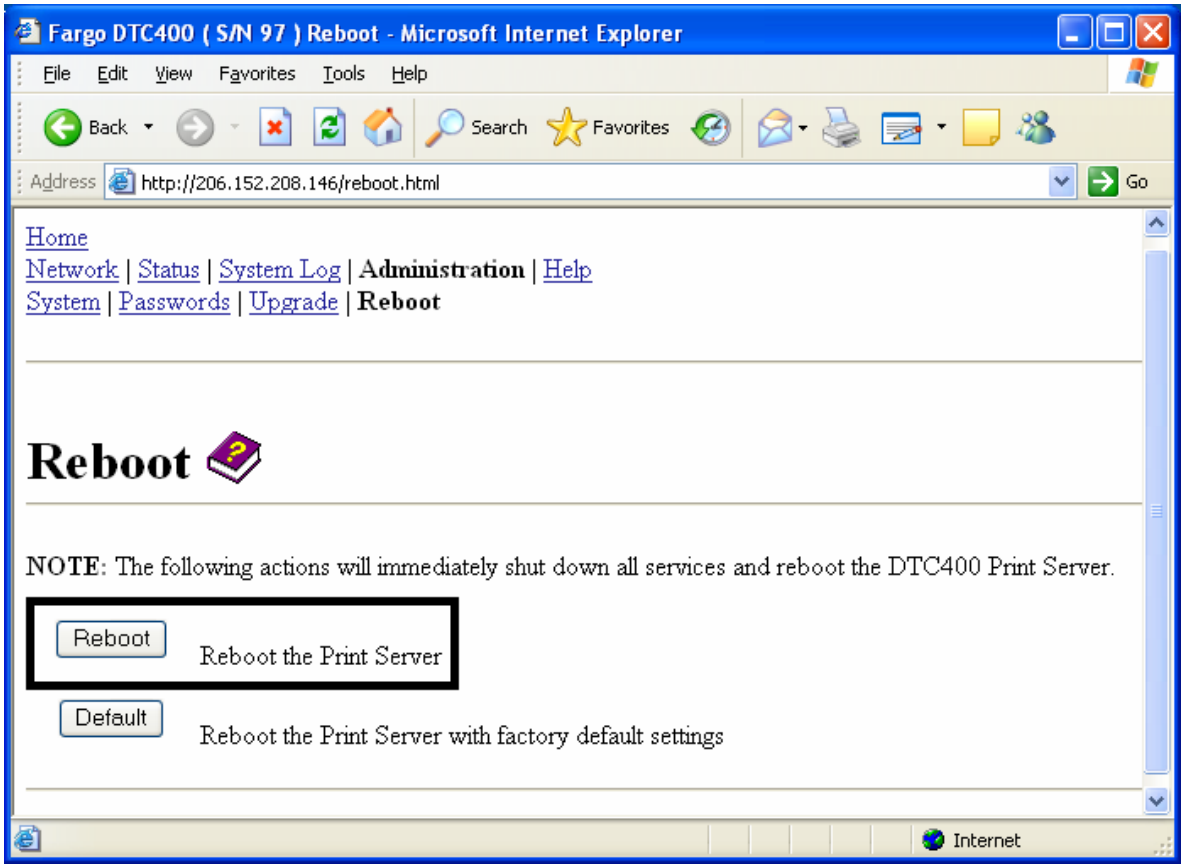
Using the Reboot pages

Rebooting the DTC400 and HDP600 restarts only the Ethernet Print Server.

Rebooting the Ethernet Server

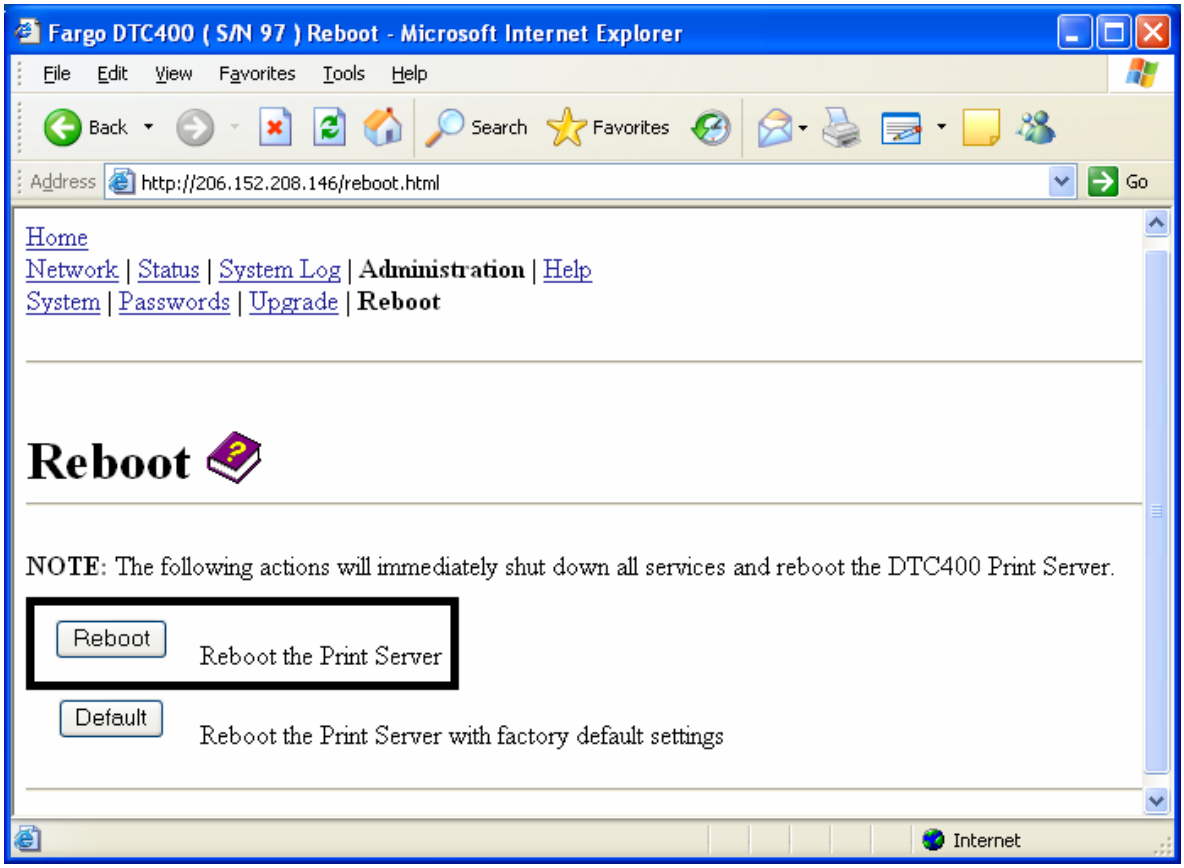
The Reboot page allows the User to restart the Ethernet Print Server.

Step	Procedure
1	Select the **Administration** link.
2	Log in as a root User (using the password) if you are so prompted. (**Note:** Any change of setting will only be accepted after you have successfully logged in.)
3	Select the **Reboot** link.
4	Select the **Reboot** button.


Fargo DTC400 (S/N 97) Reboot - Microsoft Internet Explorer
File Edit View Favorites Tools Help
Back Search Favorites
Address http://206.152.208.146/reboot.html
Go
Home
Network | Status | System Log | Administration | Help
System | Passwords | Upgrade | Reboot
Reboot
NOTE: The following actions will immediately shut down all services and reboot the DTC400 Print Server.
Reboot
Reboot the Print Server
Default
Reboot the Print Server with factory default settings
Internet

Rebooting the Ethernet Server (continued)

Step	Procedure
5	Click **Yes** when prompted.
6	Wait for the Printer to reboot and display the home page.

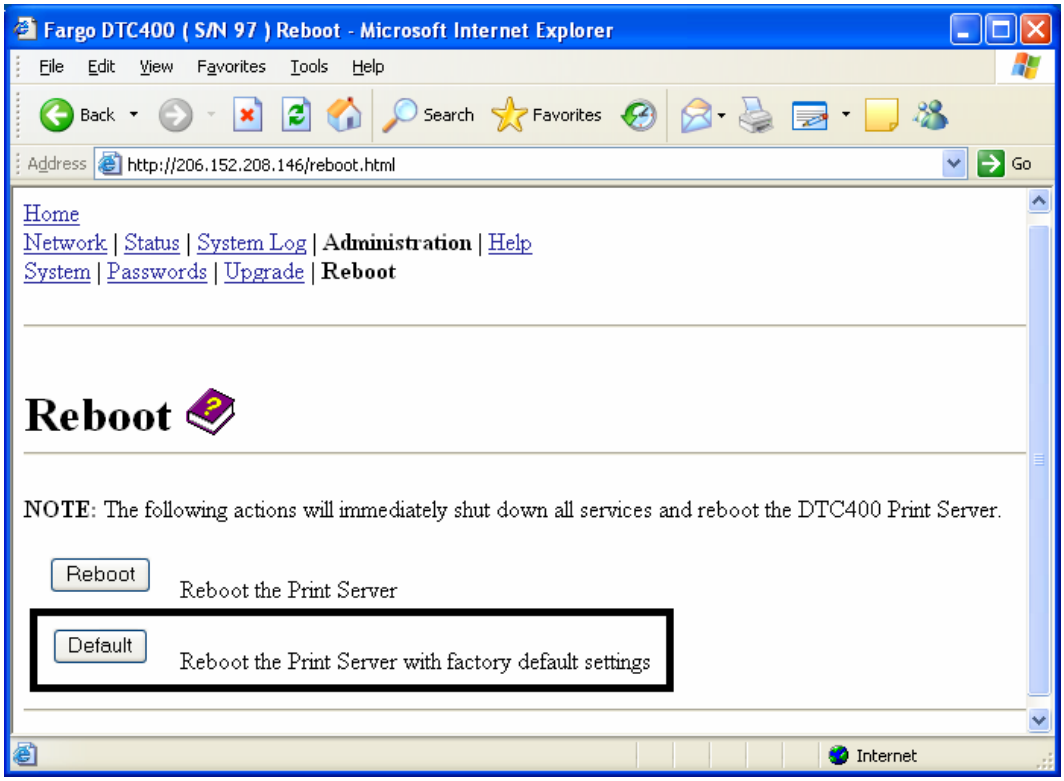

Fargo DTC400 (S/N 97) Reboot - Microsoft Internet Explorer
File Edit View Favorites Tools Help
Back Search Favorites
Address http://206.152.208.146/reboot.html
Go
Home
Network | Status | System Log | Administration | Help
System | Passwords | Upgrade | Reboot
Reboot
NOTE: The following actions will immediately shut down all services and reboot the DTC400 Print Server.
Reboot
Reboot the Print Server
Default
Reboot the Print Server with factory default settings
Internet

Resetting to Default Settings

The Reboot page also allows the User to reboot the Ethernet Print Server into a default settings mode. (**Note:** This simply restarts the Printer in a different state with the settings in memory temporarily ignored.)

When the **Default** button is selected, the stored settings in the Printer's memory are not changed.

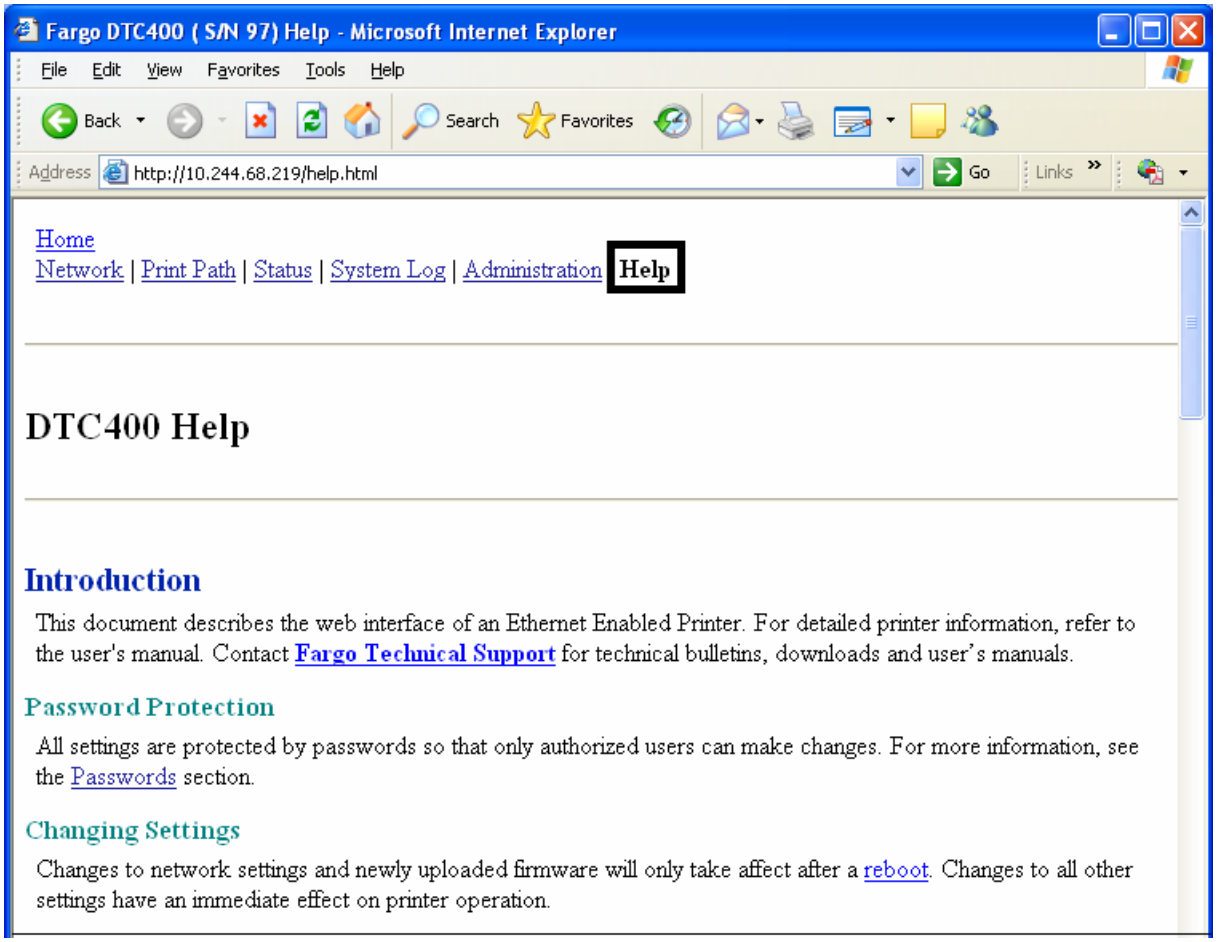
Step	Procedure
1	Select the **Administration** link.
2	Log in as a root User (using the password) if you are so prompted. (**Note:** Any change of setting will only be accepted after you have successfully logged in.)
3	Select the **Reboot** link.
4	Select the **Default** button.
5	Click the **Yes** button when prompted.
6	Wait for the Printer to reboot and display the home page.


Fargo DTC400 (S/N 97) Reboot - Microsoft Internet Explorer
File Edit View Favorites Tools Help
Back Search Favorites
Address http://206.152.208.146/reboot.html
Go
Home
Network | Status | System Log | Administration | Help
System | Passwords | Upgrade | Reboot
Reboot
NOTE: The following actions will immediately shut down all services and reboot the DTC400 Print Server.
Reboot
Reboot the Print Server
Default
Reboot the Print Server with factory default settings
Internet

Using the Help page

The Help page displays the **Help** information.

Step	Procedure
1	Open this web page at the appropriate location by clicking on the Help book icon at the top of each page. See below.
2	Review the web interface for the Ethernet-enabled Printer.


Fargo DTC400 (S/N 97) Help - Microsoft Internet Explorer
File Edit View Favorites Tools Help
Back Search Favorites
Address http://10.244.68.219/help.html
Go Links
Home
Network | Print Path | Status | System Log | Administration Help
DTC400 Help
Introduction
This document describes the web interface of an Ethernet Enabled Printer. For detailed printer information, refer to the user's manual. Contact Fargo Technical Support for technical bulletins, downloads and user's manuals.
Password Protection
All settings are protected by passwords so that only authorized users can make changes. For more information, see the Passwords section.
Changing Settings
Changes to network settings and newly uploaded firmware will only take affect after a reboot. Changes to all other settings have an immediate effect on printer operation.

Additional Procedures

Reviewing LED and Dipswitch Tables

The LEDs and dipswitches can be found on the back of Printers.

Reviewing the LED Table

LED	DTC400 position	HDP600 position	Flash Rate	Indicates
STAT LED	Upper	Right	On once per second (i.e., more **OFF** than **ON**)	The Normal Mode, IP address is configured.
			On twice per second	The IP address is not configured.
			Off once per second (i.e., more **ON** than **OFF**)	The Download mode is for updating the Ethernet interface.
			Off twice per second	There is a system error.
NET LED	Lower	Left	On	The Network link is present.
			Off	The Network link is not present.
			Blinking, off 1/3 second	The Network link is present and transmitting. It flashes off for one-third (1/3) second each time a packet is transmitted.

Reviewing the Dip Switches

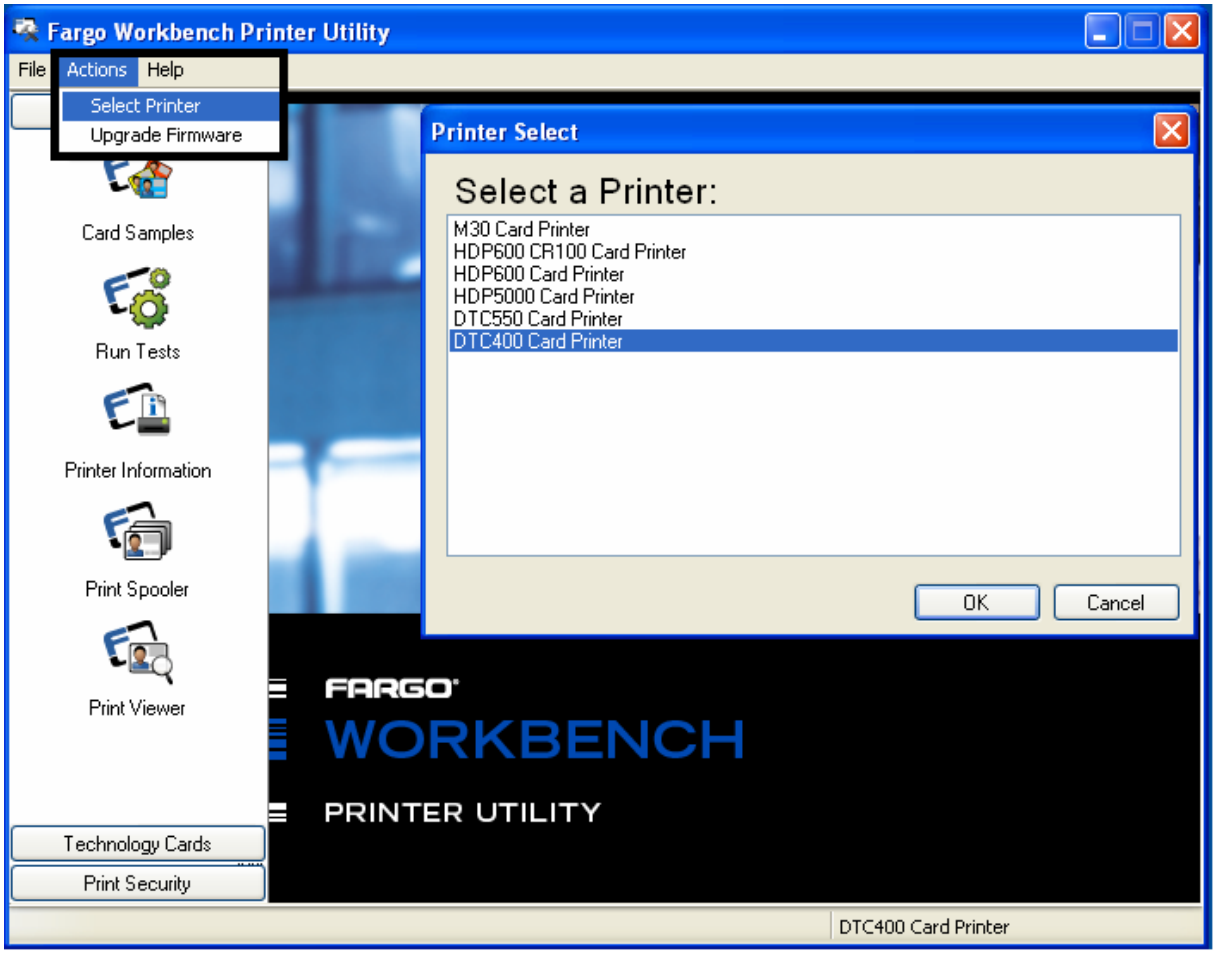
For the DTC400, **ON** means a Dipswitch is down and **OFF** means a Dipswitch is up. For the HDP600, **ON** means a Dipswitch is to the left and **OFF** means a Dipswitch is to the right.

Dipswitch		**Comments**
1	2	
OFF	**OFF**	Allows **Normal** operation.
ON	**OFF**	Forces **Factory default** settings. With the dip switches in this configuration, the unit will start up. All settings stored in permanent memory will be erased except for the Ethernet address and key value. This is useful to reset the passwords and User names when required, such as, reinstalling a Printer with an unknown configuration.
OFF	**ON**	Forces **Default IP (0.0.0.0)**. With the dip switches in this configuration, the unit will use the factory default settings. However, the stored settings in Printer's permanent memory are not changed. This simply starts the print in a different state with the settings in memory temporarily ignored.
ON	**ON**	Forces the **Download** mode. If the unit is reset and detects link integrity from a hub, the download mode is initiated so that the Firmware of the Printer Server may be upgraded.

Upgrading the Main Firmware with the Fargo Workbench Printer Utility

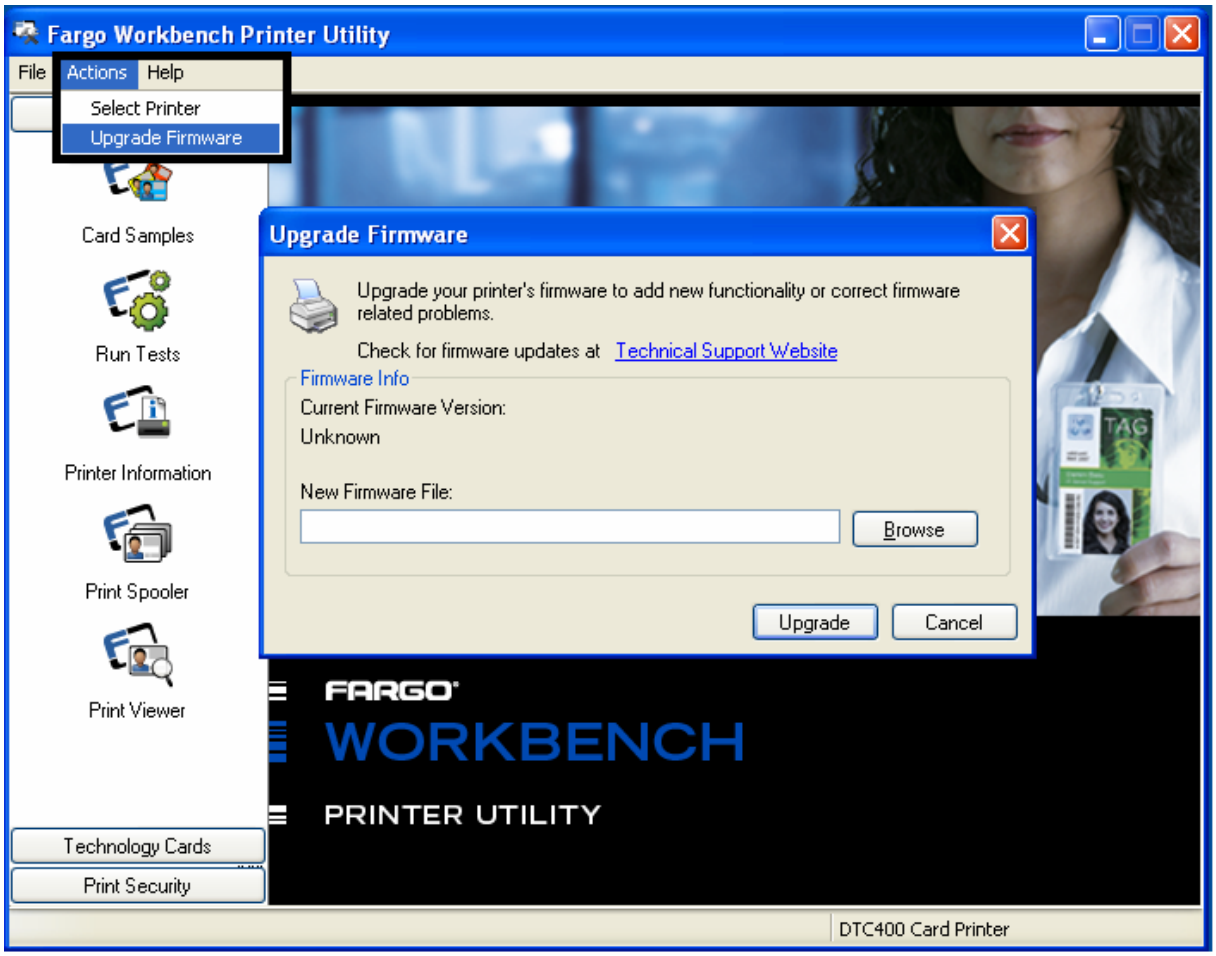
The Main Printer Firmware upgrades are done with the same procedure as the USB-connected Printer. The PC doing the upgrade must have a Driver installed for the Fargo Printer to be upgraded. (**Note:** Alternatively, a DTC400 User can upgrade the DTC400 Main Printer Firmware by using the DTC400 Upgrade web page.)

Step	Procedure
1	Run the Fargo Workbench Printer Utility by selecting from the start menu the following: Start -> Programs -> Fargo -> Fargo Workbench Printer Utility
2	Select the Fargo Printer to upgrade from the Actions Menu, as shown below.



Upgrading the Main Firmware with the Fargo Workbench Printer Utility (continued)

Step	Procedure
3	Access the Upgrade Firmware window from the Actions Menu, as shown below.
4	Select the New Firmware File by clicking **Browse** and selecting the Firmware file from the appropriate folder.
5	Begin the upgrade by clicking **Upgrade**, as shown below. Refer to the **Fargo Workbench Printer Utility User Guide** at this time.



Restoring the Factory Settings for Ethernet

There may be times when you are unable to use the current configuration of the Ethernet interface. (**Note:** This could be because you have lost the password for your Printer or you just cannot get it to work properly.)

- **Restore default settings:** The Printer has switches on the back which will restore the factory default settings to the Printer.
- **Dipswitch indicators:** For the DTC400, **ON** means a Dipswitch is down and **OFF** means a Dipswitch is up. For the HDP600, **ON** means a Dipswitch is to the left and **OFF** means a Dipswitch is to the right.
- **Lost Password or Printer Problems:** There may be times when you are unable to use the current configuration of the Ethernet interface. (**Note:** This could be because you have lost the password for your Printer or you just cannot get it to work properly.)

Enter this mode by following this procedure.

Step	Procedure
1	Remove power from the Printer.
2	a. Place the switch furthest from the LEDs in the **ON** position (Dipswitch 1 **ON**). b. Place the switch closest to the LEDs in the **OFF** position (Dipswitch 2 **OFF**).
3	Reconnect power to the Printer.
4	After 30 seconds, remove power, restore both switches to their normal positions (which is **OFF**) and then restore power.

Restoring the Default Settings

The DTC400 and HDP600 have switches on the back which will restore the factory default settings to the Printer.

- **Dipswitch indicators:** For the DTC400, **ON** means a Dipswitch is down and **OFF** means a Dipswitch is up. For the HDP600, **ON** means a Dipswitch is to the left and **OFF** means a Dipswitch is to the right.

To enter this mode on the DTC400 and HDP600, follow the next procedure.

Accessing the IP address of your Printer

The additional LCD menus for Ethernet-enabled Printers are provided to view the IP address of the Printer. Follow these procedures to access the IP Address of your Printer model.

Accessing the DTC400 IP address

Step	Procedure
1	Apply power to the Printer.
2	Ensure that the Printer is connected to your network.
3	Wait up to one (1) minute to allow the Printer to configure the IP address.
4	Scroll through the informational messages on the LCD by selecting the **INFO** button (the button on the right of the front panel).
5	View the IP address displayed as a dotted quad number. **Example:** 168.192.1.1

Ethernet Printer Troubleshooting Procedures

Troubleshooting procedures

If you are having trouble connecting to your Ethernet Printer or printing to it, you should go through each of the following procedures.

Step	Procedure
1	Follow the Verifying the Printer Connection procedure.
2	Follow the Verifying the Printer IP address procedure.
3	Follow the Verifying that your PC can access the Printer using the ping command procedure.
4	Verify that you are choosing the correct Printer Driver. (**Note:** The Driver must match the model of the Printer.)
5	Verify that the port configuration of the PC Printer Driver is set to communicate to the Printer over the correct IP address. See Frequently-asked Questions.
6	Follow the Printing a test page procedure.

Verifying the Printer Connection

Step	Procedure
1	Ensure that your Printer has a valid network connection.
3	Verify that the Printer has both LEDs blinking on and off with network activity.
3	If the LEDs do not indicate connection, verify the network connection with another device.
4	If the connection is OK, then something may be wrong with the Ethernet option installation. See the Ethernet Setup and Printer Driver Installation procedure.

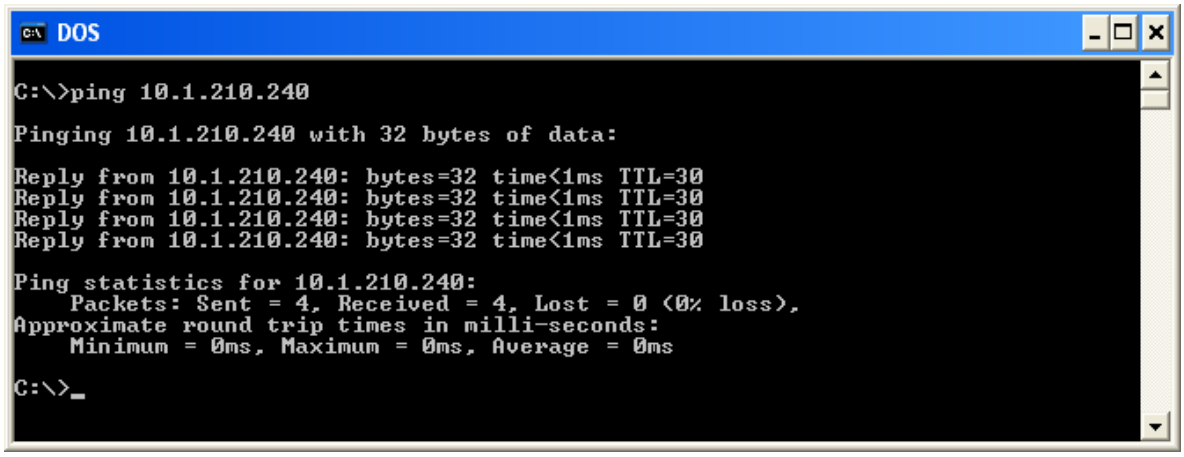
Verifying the Printer IP address

Step	Procedure
1	Check the LCD for a valid IP address (0.0.0.0 in not valid). • If the IP address is valid, go to step 4 (below). • If the IP address is not valid, go to step 2 (below).
2	If your network is using DHCP, then: • Use Fargo IP-Tracer to verify that the Printer has not been configured to use a static address. (**Note:** This guideline applies unless you have a known, unused static IP address assigned to this Printer.)
3	If you are using a static IP address, then: • Verify that there is no other device using the same address by removing your Fargo Printer and ping to the desired address. If any device responds, then you must find a different available IP address.
4	If the Printer reports an IP address, then: • Verify that it matches subnet of the network where it is connected. If your Printer has DHPC disabled, then: • The static IP address may have been previously set for a different subnet.

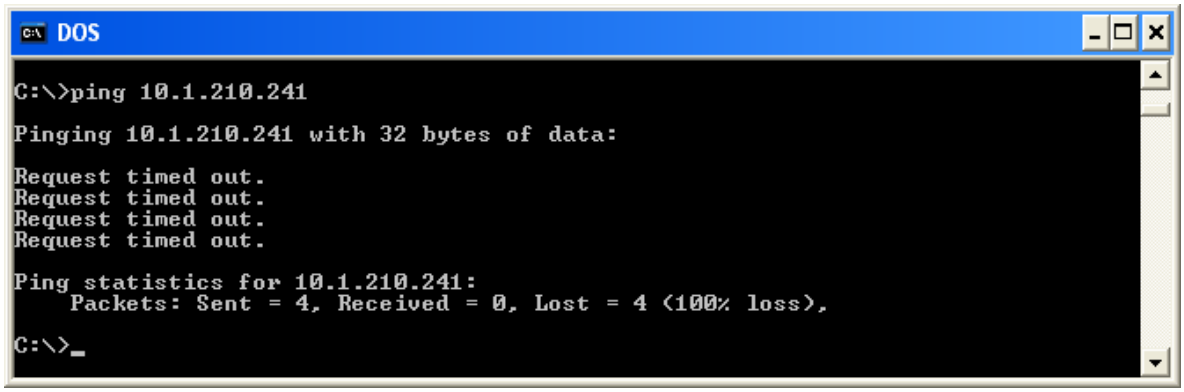
Verifying that your PC can access the Printer using the ping command

Step	Procedure
1	Follow these instructions to issue a ping command to the Printer: At a DOS prompt, enter **ping [IP Address]** **Example:** C:\>ping 210.1.10.240 • If the ping response is successful, move on to the next troubleshooting procedure. See Display A below. • If the ping response is not successful, continue to step 2 of this procedure. See Display B below.

Display A - Example of sending a ping to the Printer with a successful response



Display B - Example of ping timeout to an invalid IP address



Verifying that your PC can access the Printer using the ping command (continued)

Step	Procedure
2	Verify that the PC and the Printer are connected to the same network.
3	You may be on different subnets of your network and some of the network settings for the Printer are not correct. See your network administrator about this. (**Note:** The subnet mask must be the same as other devices on the network, and that the unique IP address is part of the network specified by the subnet mask.)

Printing a test page

Step	Procedure
1	Try printing a test page from the Printer Driver properties window. a. Open the Printer Driver properties window. b. Select Start -> Settings -> Printers and Faxes -> [your Printer Driver name (i.e., DTC400 Card Printer)] -> Properties. c. Ensure that the printing preferences are set correctly for the Ribbon installed in your Printer. d. Then select the **Print Test page** button. See the next section.
2	If you cannot print a test page, then consider the following: • There may be an error at the Printer. • There may be a job in the Windows print queue which has stalled. • The Printer may be paused or set to operate offline in the Windows print queue.

Reviewing Frequently-asked Questions

Question	Answer
How do I know if my Printer has the Ethernet option installed?	If your Printer has the RJ45 connector installed on the back of the Printer, then it has this Ethernet option installed.
Can my non-Ethernet-enabled Printer be upgraded to have an Ethernet interface?	No.
What PC operating systems work with my Ethernet Printer?	The Windows 2000 Windows XP or Windows Server 2003 operating systems work with your Ethernet Printer.
How do I connect my Printer to my network?	You can connect from the RJ45 network connection on the back of your Printer to an available connection on your network (not directly to your PC). You can use a good CAT-5 or better cable to make this connection.
How can I find the MAC address of my Ethernet Printer?	If you know the IP address of your Printer, you can access this through the home web page of the Print Server. See the Reviewing the DTC400 Home Page. **OR** If you do not know the IP address or the Printer does not work with a usable IP address, then the MAC Address can be found using the tool Fargo IP-Tracer. (**Note:** This can be installed and used to locate all the Fargo-compatible Printers on your network.)

Reviewing Frequently-asked Questions (continued)

Question	Answer
How can I find the IP address of my Ethernet Printer?	You can find it in the LCD of the Printer if the Ethernet option is functioning properly. See Accessing the IP address of your Printer.
Can I print from my PC to multiple Ethernet Printers?	Yes. Follow this procedure: 1. You can install multiple Printer instances by using the Add Printer wizard. 2. Run the Add Printer Wizard by choosing Add Printer from the Printers Control Panel. 3. Select Add a Local Printer 4. Create a new port and select **Remote TCP/IP Card Printer Port**. Click **Next**. 5. Enter the IP address of the Printer. Click **Next**. 6. Enter a name for the port. Click **Next**. 7. Click **Finish**. 8. Select Fargo for the Manufacturer and select the DTC400 for the Printer. Click **Next**. 9. Enter a name for the Printer instance. Click **Next**. 10. Click **Finish**. 11.
Can multiple PC's print to my Ethernet Printer?	Yes. Each PC must install the Printer Driver software for the specific Fargo Ethernet-enabled Printer and connect to the intended Printer, using the correct IP address.
Can I print from my PC to an Ethernet Printer on a different network segment?	Yes. If you know the IP address of the Printer on any segment of your network, you will be able to print to it.

Reviewing Frequently-asked Questions (continued)

Question	Answer
Can I use Fargo IP-Tracer to locate Printers on a different network segment?	No. The IP-Tracer can only locate Fargo-compatible Printers located in the same network segment (as the PC running IP-Tracer).
How do I upgrade the Printer Firmware in my Ethernet-enabled Printer?	This is done in the same manner as a USB-connected Printer. The PC doing the upgrade must have a Driver installed for the Fargo Printer to be upgraded. Follow this procedure. 1. Run the Fargo Diagnostic Utility from the start menu: Go to the Start -> Programs -> Fargo -> Fargo Diagnostic Utility. 2. Select the Fargo Printer to upgrade from the drop-down box. 3. Go to the Firmware Updates tab. 4. If you need to download the update file from the Internet, select the **Download Firmware** button. 5. Choose the update file with the **Select Firmware** button. 6. Put your Printer into the upgrade mode. See the instructions for your specific Fargo Printer. 7. Select the **Send Firmware** button.
How do I upgrade the Print Server Firmware for my Printer?	See Upgrading the Print Server.
What is the default User name and password for the Printer?	The default passwords are blank (i.e., an empty string). • The default Users are as follows: **root** as the administrative User and **guest** as a non-administrative User. • The Printer supports four (4) Users.

Reviewing Frequently-asked Questions (continued)

Question	Answer
What if I lose the password for my Printer or it is not accepted?	See Reviewing the Dip Switches. Factory default settings will be restored to the Printer if power is applied to the Printer with Dipswitch 1 in the **ON** position and Dipswitch 2 in the **OFF** position. (**Note:** This will reset all Print Server settings, which includes static network settings, user configurations and user passwords.)
What should I do if the IP address of my Printer is being changed by my network?	Follow this procedure: 1. Contact your network administrator. Ask that your current IP address be reserved or ask that they provide a specific IP address that you can use to configure the Ethernet interface. **OR** 2. Choose an IP address that you know will not be used by any other PC, server or network device. Use those settings to configure your Printer with static network settings. (**Caution:** Do not do this unless you know that these settings will always be available.)

Reviewing Frequently-asked Questions (continued)

Question	Answer
How can I verify/change what IP address my installed Printer Driver is expecting to find my Printer?	Follow this procedure. 1. Open the Printer Driver properties window. 2. Select Start -> Settings -> Printers and Faxes -> [your Printer Driver] -> Properties. 3. From the Ports tab, select **Configure Port**. (**Note:** The Host name will indicate IP address of the connected Printer. If this does not match your Printer's IP address, you can change it from this window.) 4. Enter the correct IP address. 5. Select **OK**. 6. Select **Apply**. 7. Select **Close**. 8. Specify the new IP address. 9. Select: **Next**, **Next**, **Finish** and **Close**. 10. Select **Apply**. 11. Select **Close**.
How do I configure my Printer's IP settings?	By default, the Printer is configured for dynamic IP address assignment. That is, it will try to get its IP address and other settings from your network. If it is given valid network settings, it will use them. **OR** You can choose to configure the Printer, using a static IP address and network settings. (**Note:** This can be entered using the Network web page of the Printer or the Fargo IP Tracer program.) See Configuring the Network Settings.

Reviewing Frequently-asked Questions (continued)

Question	Answer
How do I choose a static IP address for my Ethernet Printer?	You can use the web pages if you know the current IP address. See the Accessing the Home page. **OR** You can use Fargo IP-Tracer which allows you to find Fargo-compatible Printers and specify their addresses. (**Note:** You can save static addresses. However, they are not used until you reconfigure the Printer to use those static addresses and reboot the Printer.)
How do I set the Printer to work with a static IP address?	You can use the web pages if you know the current IP address. • Select the **Use the following IP address** button on the Network web page. **OR** • Use Fargo IP-Tracer, which allows you to find Fargo compatible Printers and specify their addresses.
What do the LEDs by the Ethernet connection on the back of the Printer indicate?	The LEDs indicates network activity. See Reviewing the LED Table.
How do I print a test page from Windows to verify the Ethernet configuration of the Printer and Printer Driver?	Follow this procedure. 1. Open the Printer Driver properties window. 2. Select Start -> Settings -> Printers and Faxes -> [your Printer Driver name (i.e., DTC400 Card Printer)] -> Properties. 3. Ensure that the printing preferences are set correctly for the Ribbon installed in your Printer. Then select the **Print Test page** button.

Glossary of Terms

Term	Purpose
MAC (Media Access Control)	The unique numeric value address associated with a network device that gives the device a unique identity. This address is assigned by the device manufacturer to ensure its uniqueness.
TCP (Transmission Control Protocol)	The Network protocol that allows reliable network communications between devices.
IP (Internet Protocol)	The Network protocol that identifies devices and messages by addresses so that communications can occur between devices on different local networks.
TCP/IP	Network communications using TCP and IP protocols.
ICMP (Internet Control Message Protocol)	The Basic message protocol for the internet.
DHCP (Dynamic Host Configuration Protocol)	The protocol used by a network to automatically assign network settings to connected devices so that they will work together.
DNS (Domain Name System)	Defines the Network protocol that allows devices to find IP addresses from a network name server.
DNS Server Address	This is the address of the server that provides the translation from a descriptive name to an IP address.
DNS Domain Suffix	This is the suffix to be added to the domain name make a complete name.

Glossary of Terms (continued)

Term	Purpose
SNMP (Simple Network Management Protocol)	This is protocol for the network management services. This protocol provides a means for network compliant devices, called agents, to store data about themselves in Management Information Bases (MIBs) and return this data to the SNMP requesters.
MIB (Management Information Base)	A formal description of the way an agent can be accessed using SNMP and the functions that can be managed.
Network Settings	The basic network parameters needed to configure the network interface. (**Note:** These include the IP Address, the Subnet Mask, the Default Gateway, the DNS Server Address and the DNS Domain Suffix.)
IP addresses	Specifies the current IP addresses that are 32-bit values that are normally expresses in dotted-quad format. (**Note:** This address must not be the same as another device on the same local network.)
Subnet mask	Specifies a 32-bit value that routers use to send a message to the correct subnet.
Default gateway	Specifies the address of the router (in a network using subnets) that forwards traffic to a destination outside of the subnet of the transmitting device.
Telnet	This is a common terminal emulation program that allows a User to send commands to a TCP/IP connected device and receive the responses.
UDP (User Datagram Protocol)	Defines a protocol for sending and receiving messages on a network.
Syslog	The standard method for logging system events.
Root User	A User with administrative rights to change any Printer settings.
Guest User	A User without rights to change Printer settings.
Ping	A common utility or command that sends a message to network devices asking for a return message. (**Note:** This is used to diagnose if the device is on the network or to troubleshoot the connection.)

Section 6: Printer Adjustments

See this section for Printer adjustments.

Safety Messages (review carefully)

Symbol	Critical Instructions for Safety purposes
Danger:	**Failure to follow these installation guidelines can result in death or serious injury.** Information that raises potential safety issues is indicated by a warning symbol (as shown to the left). • **To prevent personal injury**, refer to the following safety messages before performing an operation preceded by this symbol. • **To prevent personal injury**, always remove the power cord prior to performing repair procedures, unless otherwise specified. • **To prevent personal injury**, make sure only qualified personnel perform these procedures.
Caution:	**This device is electro statically sensitive. It may be damaged if exposed to static electricity discharges.** Information that raises potential electrostatic safety issues is indicated by a warning symbol (as shown to the left). • **To prevent equipment or media damage**, refer to the following safety messages before performing an operation preceded by this symbol. • **To prevent equipment or media damage**, observe all established Electrostatic Discharge (ESD) procedures while handling cables in or near the Circuit Board and Printhead Assemblies. • **To prevent equipment or media damage**, always wear an appropriate personal grounding device (e.g., a high quality wrist strap grounded to avoid potential damage). • **To prevent equipment or media damage**, always remove the Ribbon and Cards from the Printer before making any repairs, unless otherwise specified. • **To prevent equipment or media damage**, take jewelry off of fingers and hands, as well as thoroughly clean hands to remove oil and debris before working on the Printer.

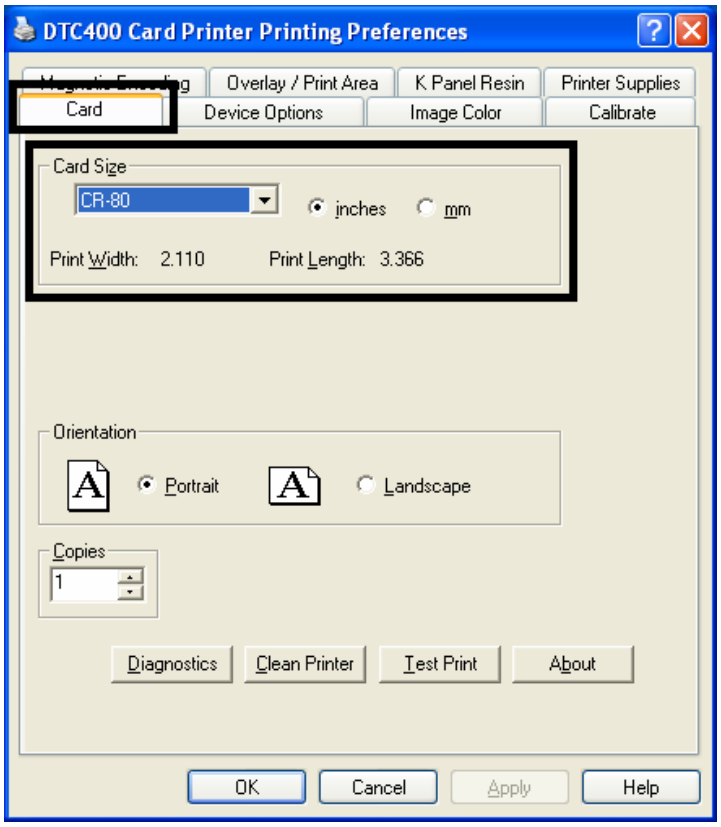
DTC400 Print Driver Options

The options are provided in this section.

Using the Card tab (DTC400)

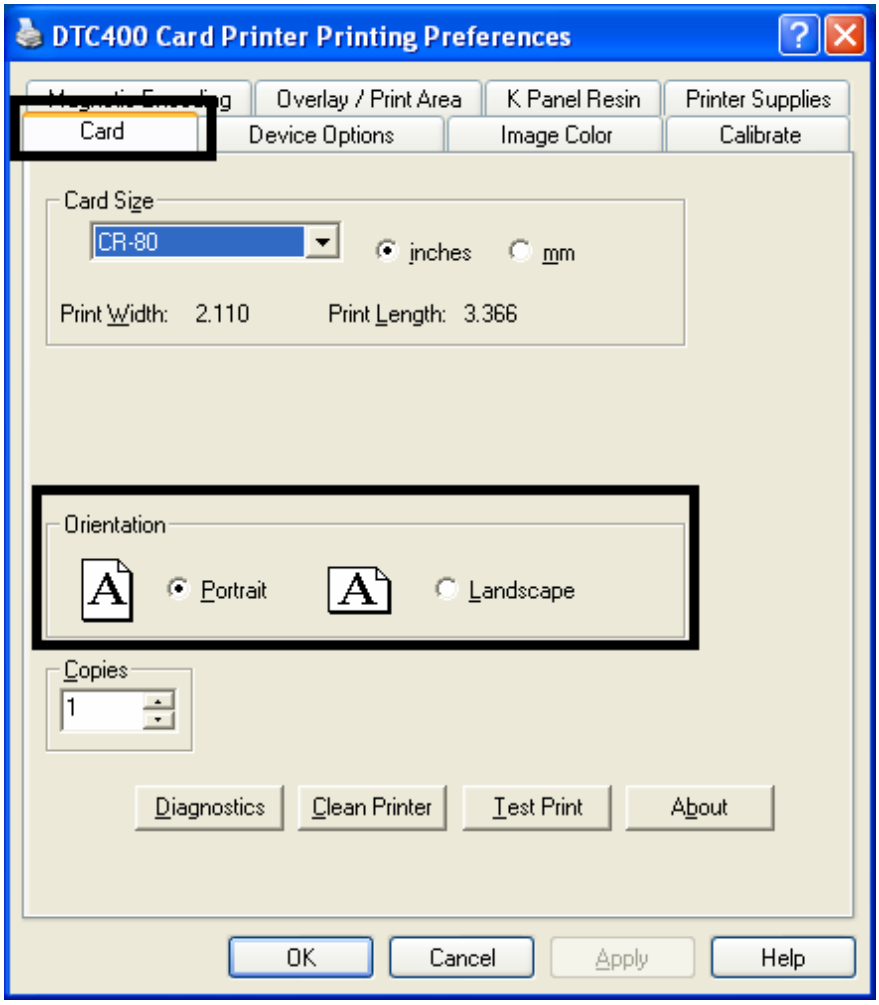
Adjusting the Card Size Option

Step	Description
1	Click **inches** or **mm** to choose the desired unit of measurement. (**Note No.1:** When designing a card format, always set the card size or page size within the card design program to the exact dimensions of a CR-80 card.) (**Note No.2:** The Card Size indicates that the Printer accepts standard, "credit card" size CR-80 (ISO ID-1) cards. The dimensions of the total print area for this card size appear in the Print Width and Print Length boxes.)



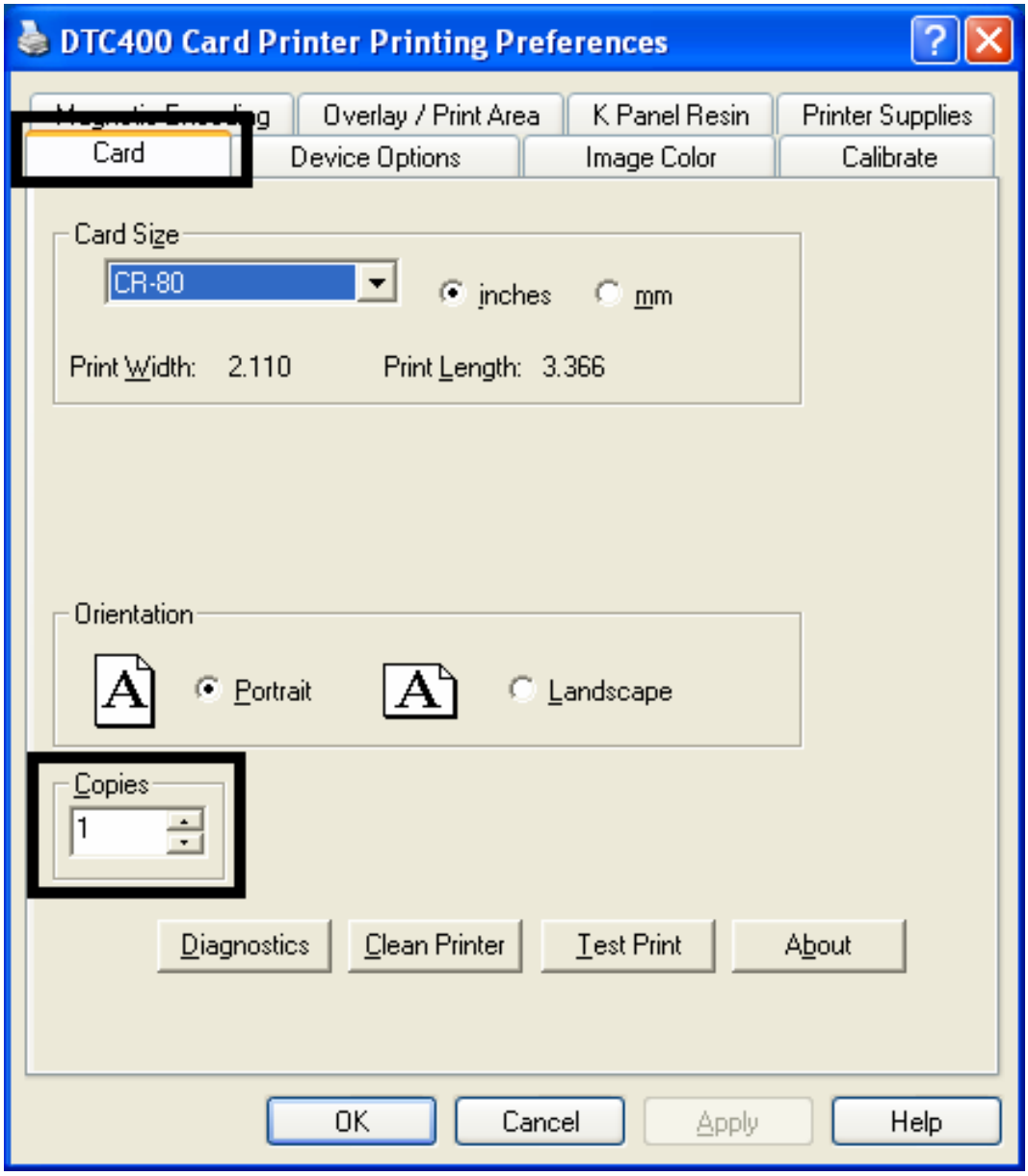
Adjusting the Orientation Option

Step	Description
1	Select **Portrait** to cause the card to print in a vertical orientation. **OR** Select **Landscape** to cause the card to print in a horizontal orientation. (**Note:** An icon illustrating a printed card helps represent the difference between the two.)



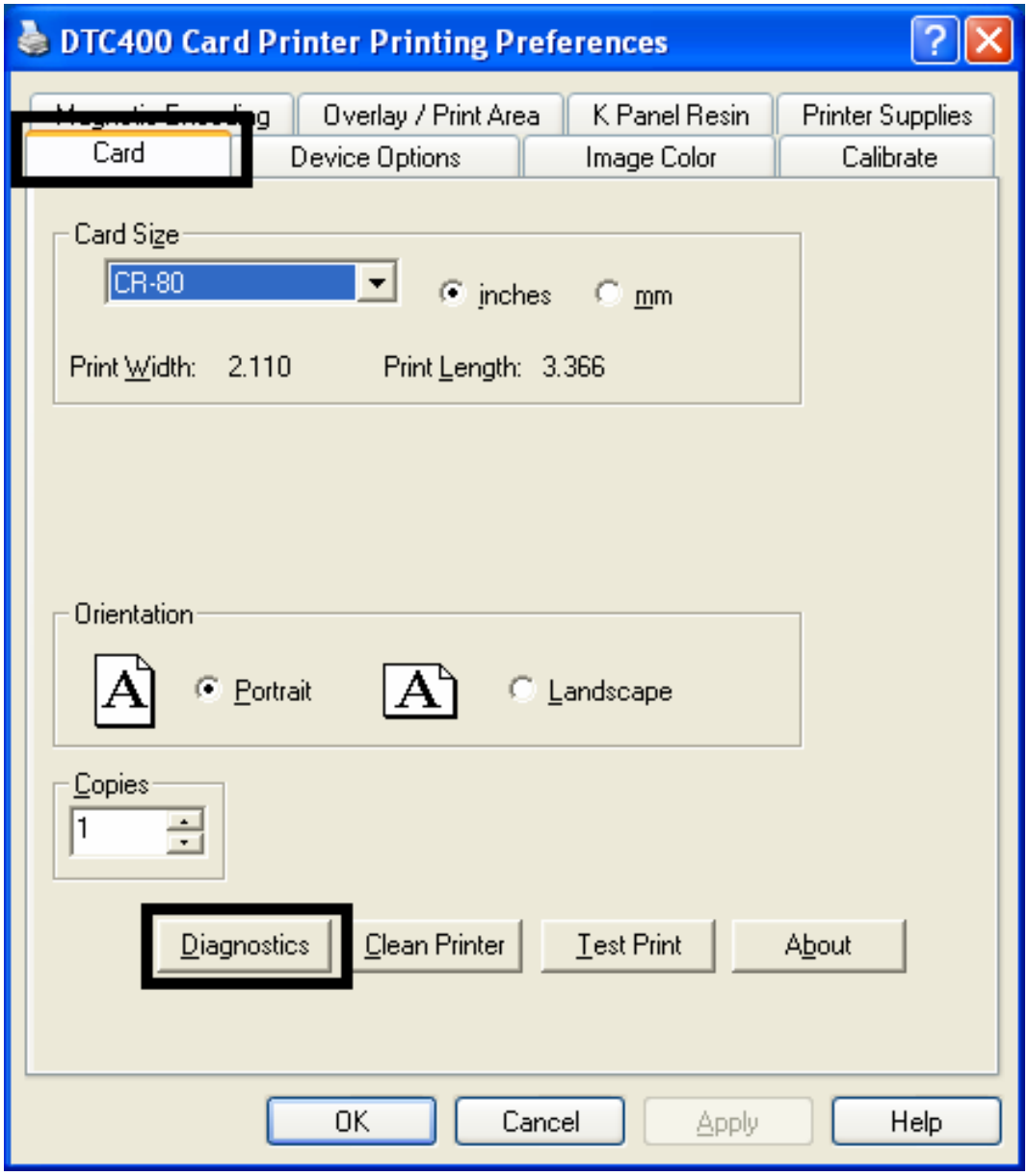
Selecting the number of copies

Step	Description
1	Select the number of copies by clicking on the UP or DOWN arrows, as shown below.



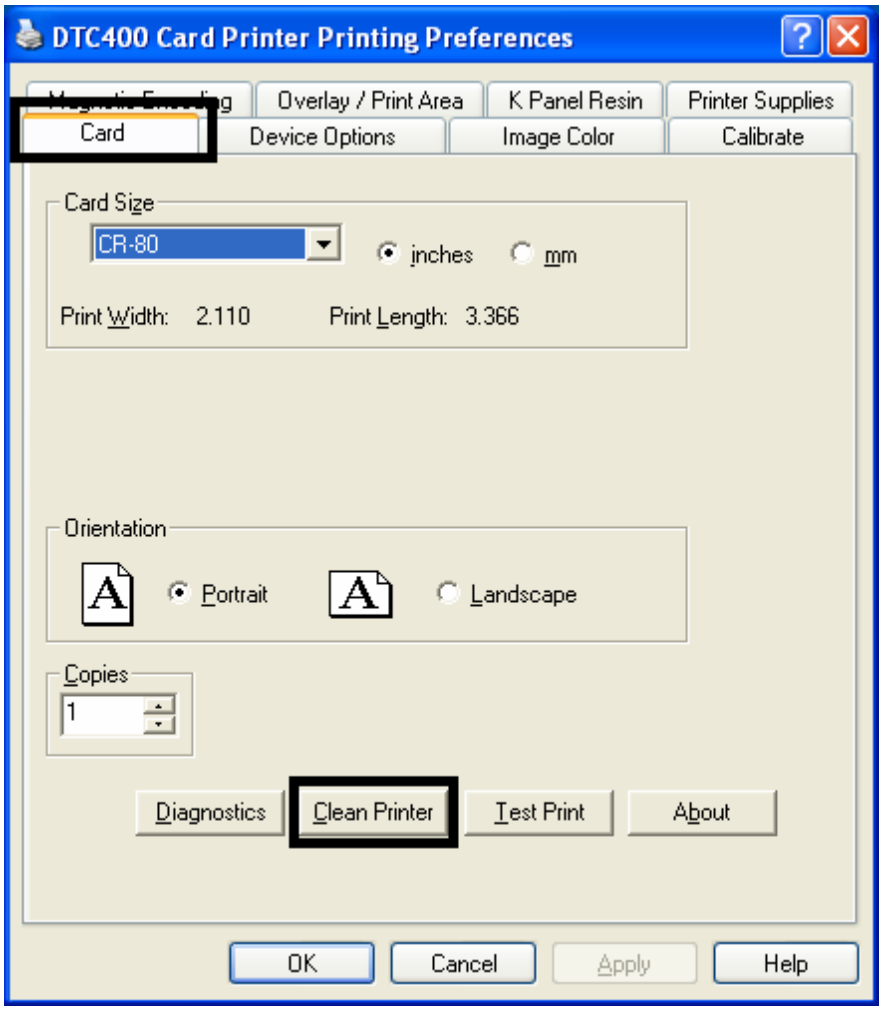
Using the Diagnostics button under the Card tab

Step	Description
1	Click **Diagnostics** to bring up the Fargo Workbench Printer Utility window. See the Fargo Workbench Utility section.



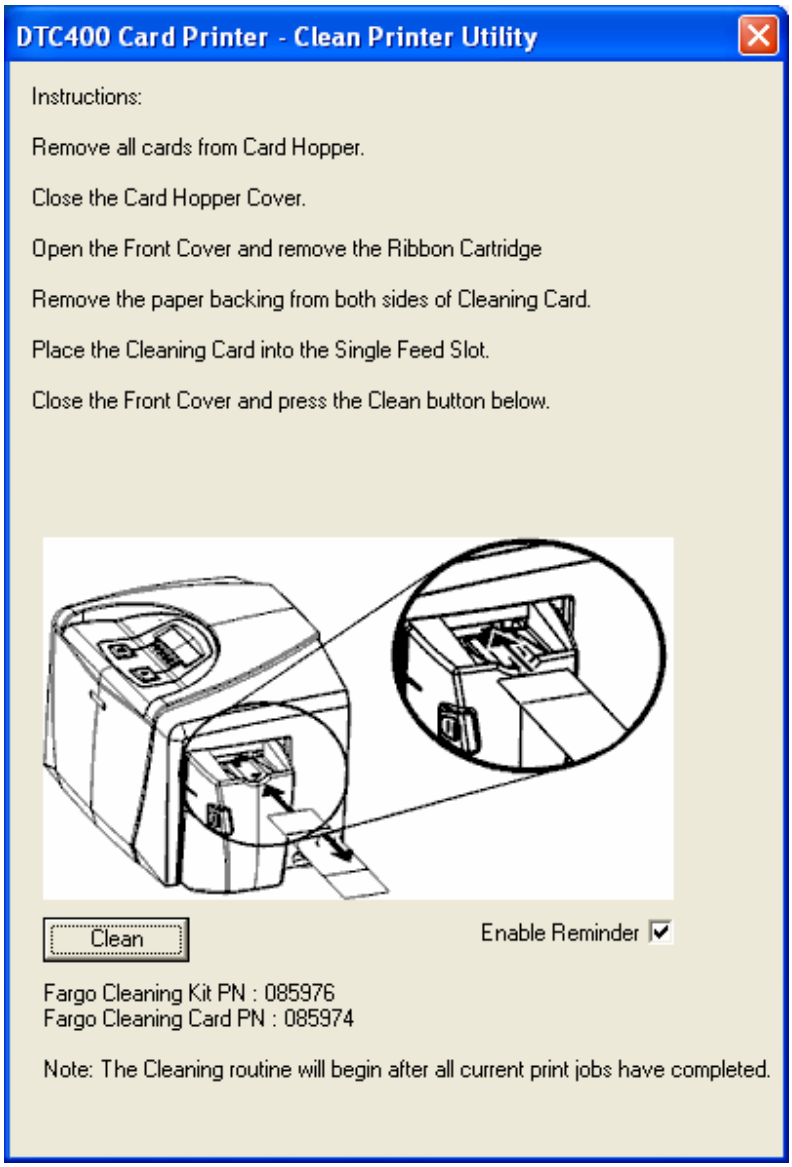
Using the Clean Printer Option

Step	Description
1	Click **Clean Printer** to display the Clean Printer Utility window.
2	Remove all cards from the Card Hopper and close the Hopper door.
3	Open the Front Cover and remove the Ribbon Cartridge.
4	Remove the paper backing from both sides of the Cleaning Card.
5	Place the Cleaning card into the Single Feed Slot.



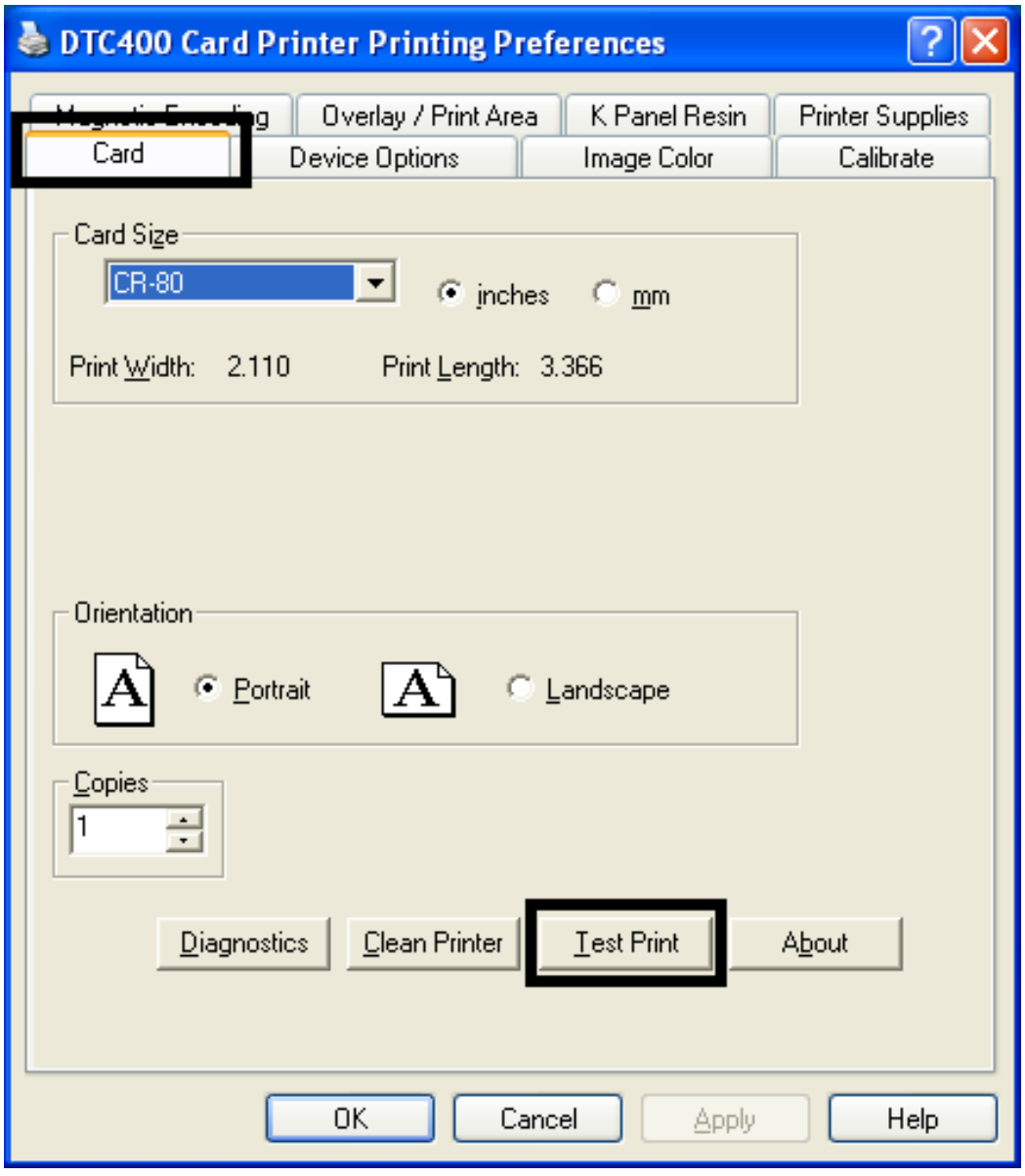
Using the Clean Printer Option (continued)

Step	Description
6	Click **Clean.** (**Note:** The Printer will begin to feed the cleaning card through the card path.)
7	Reinsert the Print Ribbon and cards after the cleaning procedure has completed.


DTC400 Card Printer - Clean Printer Utility
Instructions:
Remove all cards from Card Hopper.
Close the Card Hopper Cover.
Open the Front Cover and remove the Ribbon Cartridge
Remove the paper backing from both sides of Cleaning Card.
Place the Cleaning Card into the Single Feed Slot.
Close the Front Cover and press the Clean button below.
Clean
Enable Reminder
Fargo Cleaning Kit PN : 085976
Fargo Cleaning Card PN : 085974
Note: The Cleaning routine will begin after all current print jobs have completed.

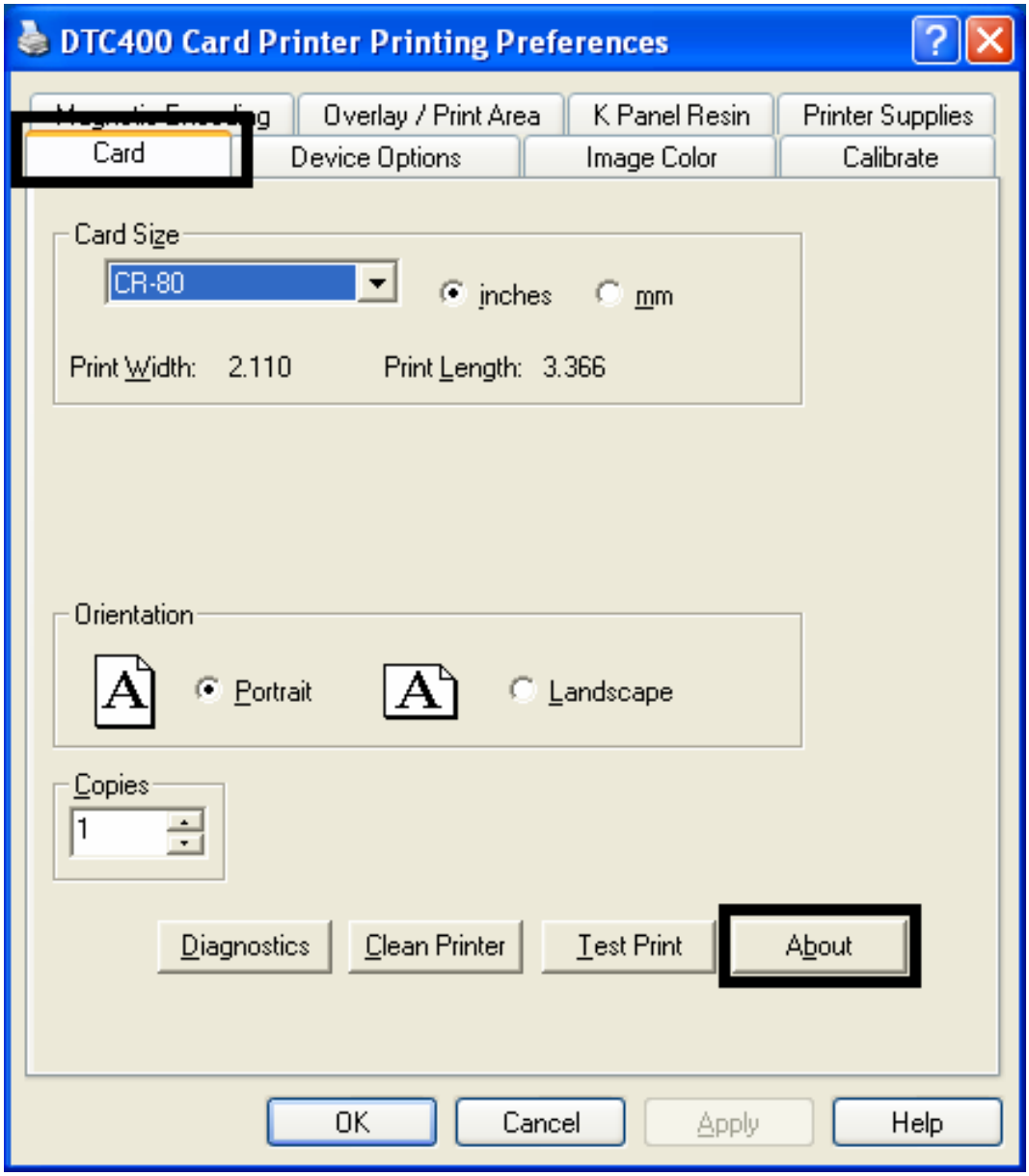
Using the Test Print button

Step	Description
1	Click **Test Print** to send a simple self-test print to the Printer. • Ensure that a **YMCKO** Ribbon is installed for the DTC400. • Ensure that the computer is effectively communicating with the Printer and that the Printer is functioning properly. • Ensure that a **YMCKOK** Ribbon is installed for a DTC400 Card Printer with a Flipper Module to print a dual-sided image.



Using the About button

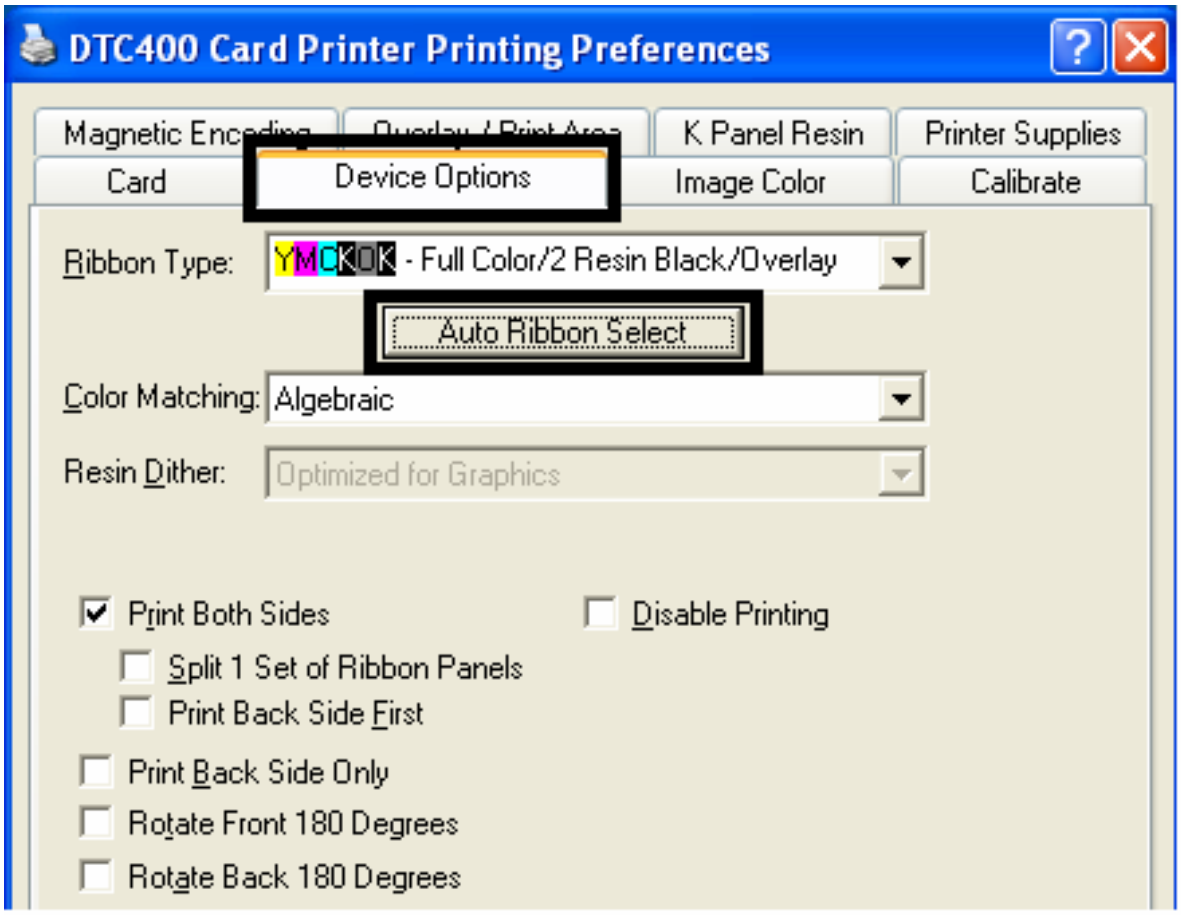
Step	Description
1	Click **About** to open a dialog box containing the copyright and version, date code information about this Printer Driver software.



Using the Device Options tab (DTC400)

Reviewing the Device Options tab (DTC400)

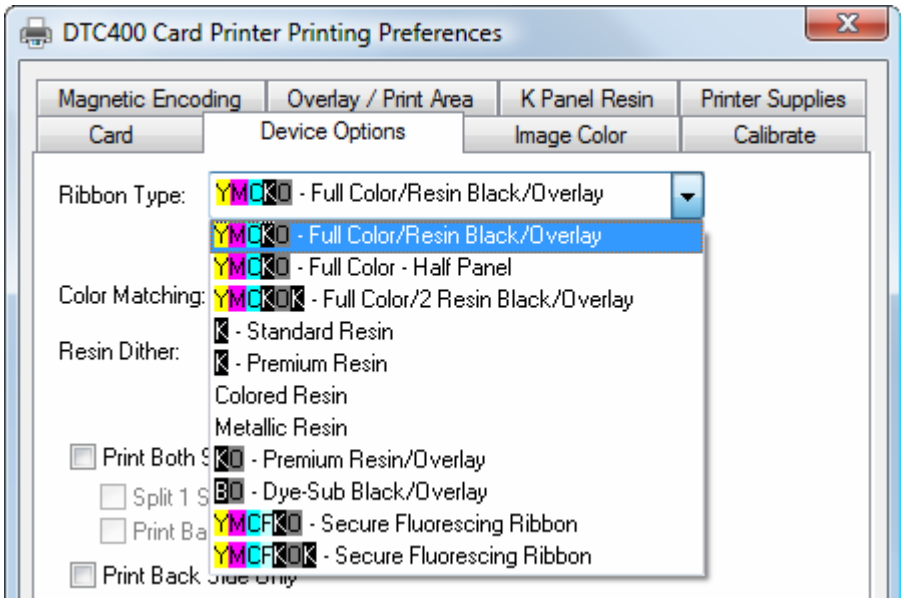
The DTC400 window with the Device Options tab is displayed below.



Adjusting the Ribbon Type option

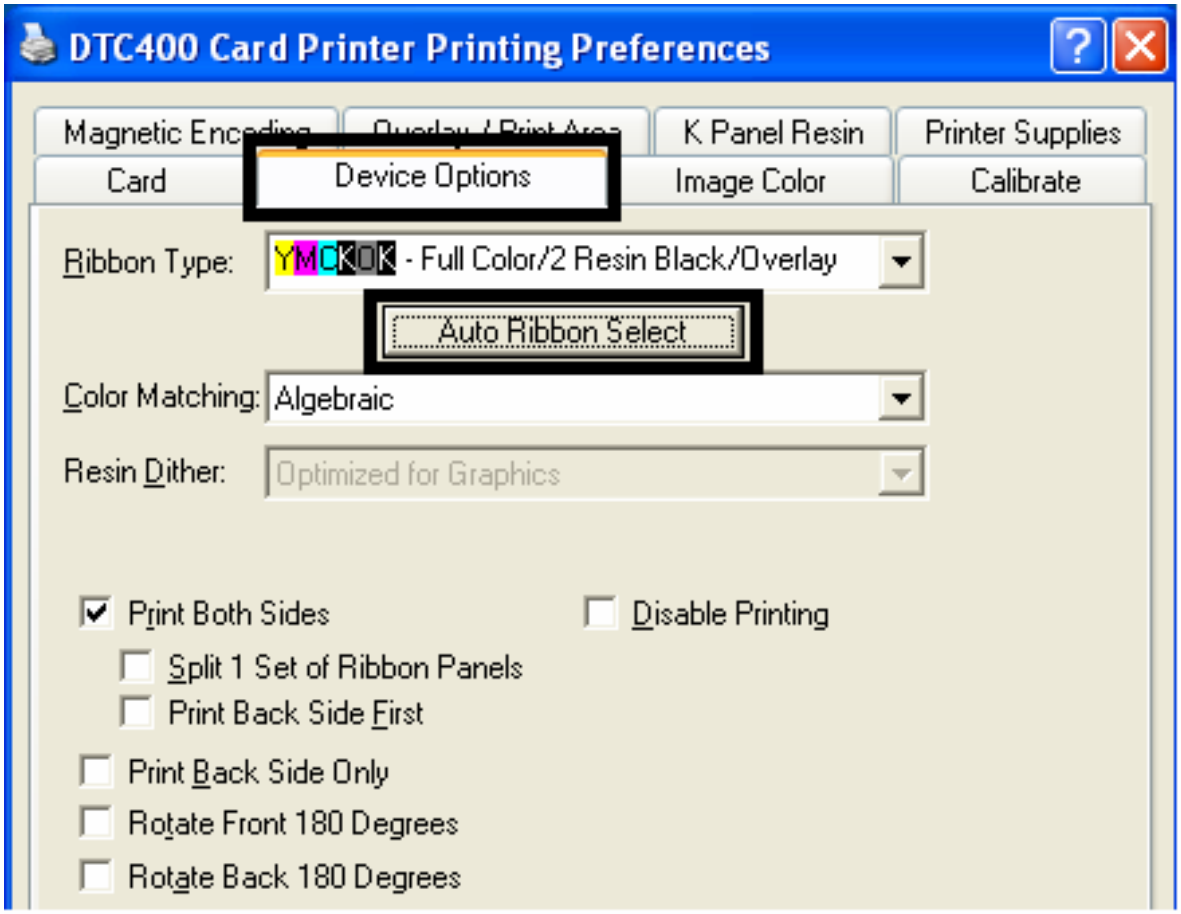
Use the Ribbon Type option to select Print Ribbons.

Step	Description
1	Select the appropriate **Ribbon Type** for the type of Print Ribbon in use. • YMCKO – Full Color/Resin Black/Overlay • YMCKO – Full Color - Half Panel • K – Standard Resin • K – Premium Resin • Colored Resin • Metallic Resin • KO – Premium Resin/Overlay • BO – Dye-sub Black/Overlay • YMCFKO – Secure Fluorescing Ribbon • YMCFKOK – Secure Fluorescing Ribbon



Selecting the Auto Ribbon Select option

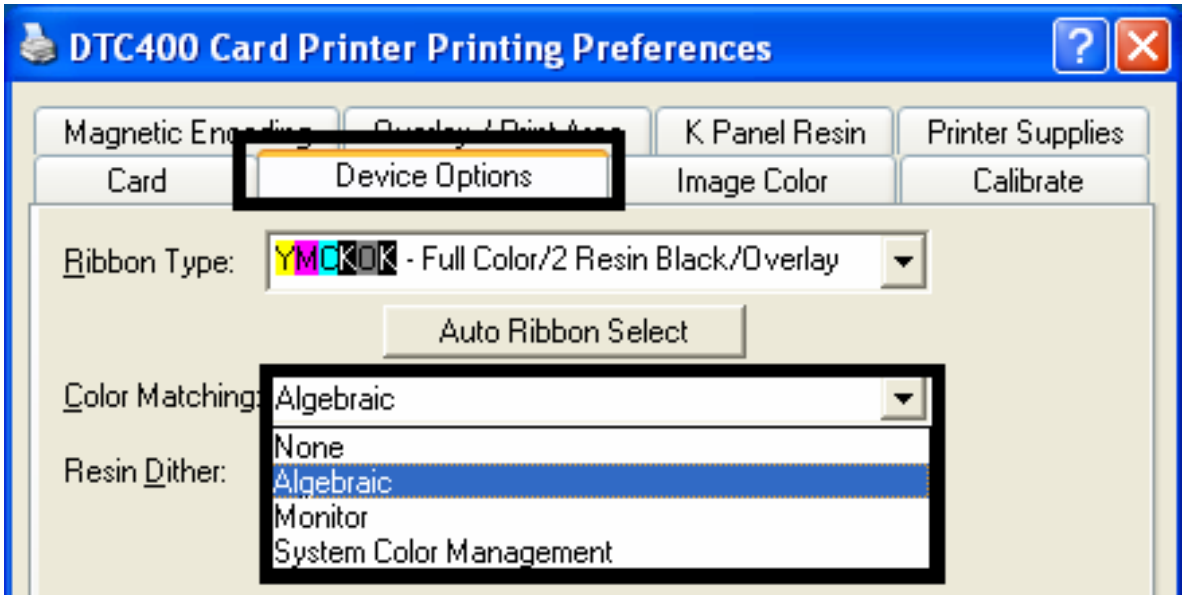
Step	Description
1	Click **Auto Ribbon Select** to verify that the Ribbon type selected matches the Ribbon installed in the Printer. (**Note:** The Printer Driver will change the Ribbon type to the correct setting or validate. It will also display a dialog that it has changed the current setting or that the current Ribbon type is correct.)



Adjusting the Color Matching option

Use the **Color Matching** dropdown menu to choose the color matching options which best fits the print job requirements.

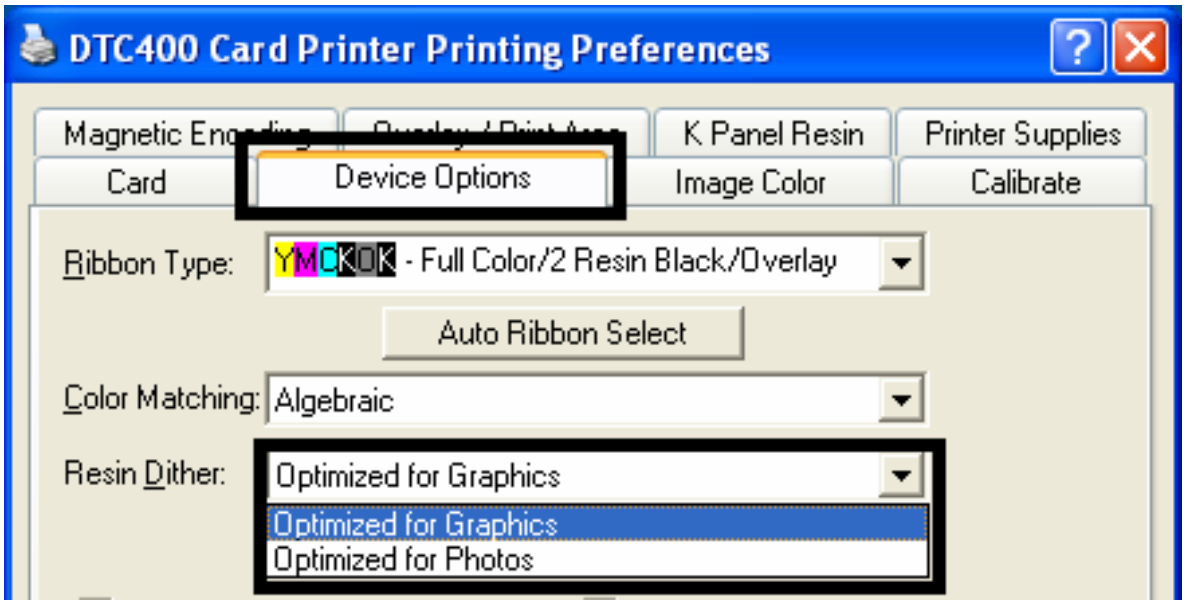
Step	Description
1	Select **None** for print speed versus print color or for use of third party color matching software. **OR** Select **Algebraic** (a) for the Printer Driver to make very simple, yet fast, color balance adjustments; (b) for more natural looking images without actually utilizing any specific color matching; or (c) for customized, printed coloring of the cards through the Image Color tab. **OR** Select **Monitor** for the Printer Driver to make color corrections similar to the Algebraic option but through a more complex color matching algorithm. **OR** Select **System Color Management** for Windows to make color corrections. This provides a closer match to the sRGB color specifications. (**Note:** This option shifts colors to a different color model so the colors in the image will more closely match how they appear on the monitor.)



Adjusting for the Resin Dither

Select the appropriate dither method according to the type of image to be printed. This option affects objects printed with a resin-only Print Ribbon or when printing a dual sided card with resin only on the back side of the card.

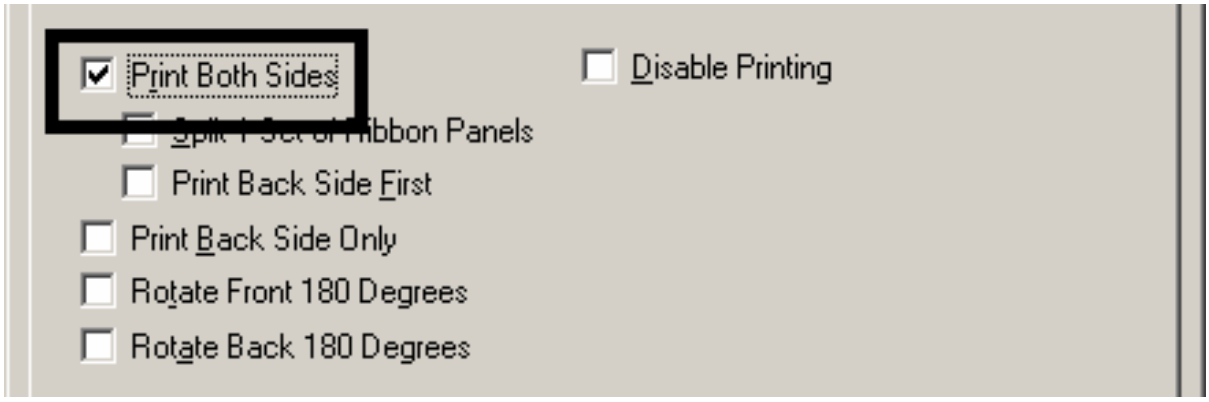
Step	Procedure
1	Select **Optimized for Photo** when printing photo quality images with resin. **OR** Select **Optimized for Graphics** when printing drawings and graphics (e.g., clipart, logos, etc.) with resin.



Using the Print Both Sides option

Use this option to automatically print on both the front and back of a card.

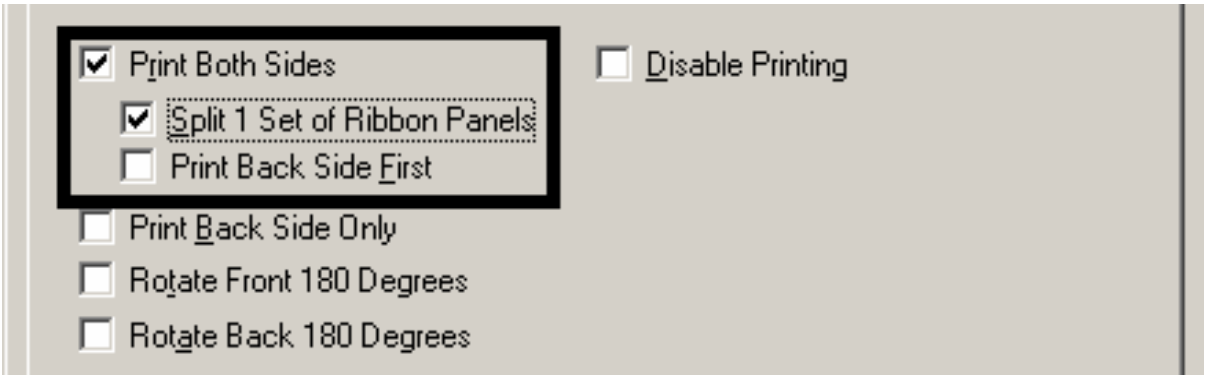
Step	Procedure
1	Select this option in conjunction with any application program that supports a multiple-page document, duplex printing. (**Note:** The program must be able to send down two or more separate pages to be printed within the same document.)
2	• Page 1 will be transferred to the front side of the card. • Page 2 will be transferred to the backside of the card. (**Note:** The Printer Driver will always place all odd numbered pages on the front side of the card and all even numbered pages on the back side with this option selected. If an odd number of pages are printed to the Driver while this option is selected, then the Printer will print an additional blank side, and transfer it to the card.)



Using the Split 1 Set of Ribbon Panels option

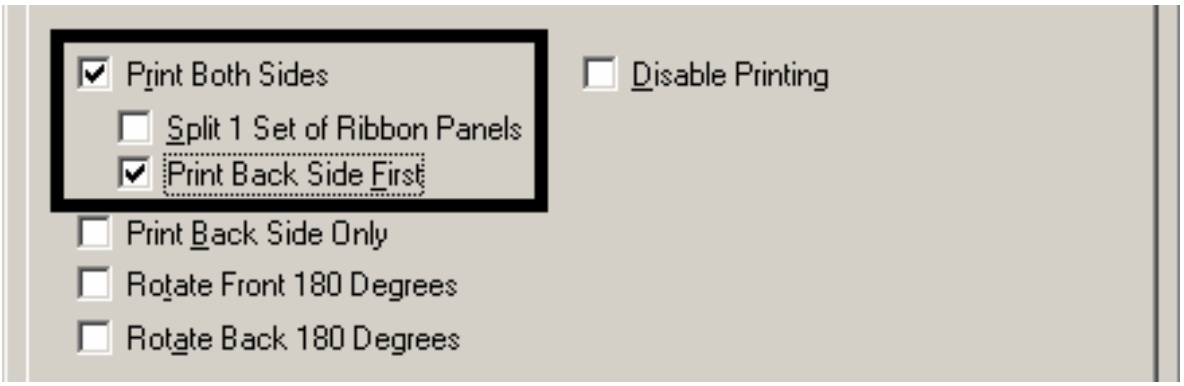
Use this option to provide the most economical means of printing a dual-sided card since a single set of ribbon Panels will be split to print both the front and backsides of a card.

Step	Procedure
1	Select this option to automatically print full-color on the front of a card and resin black on the back of a card (using either of the Full-color YMCKO, YMCKOK, YMCFKO, or YMCFKOK Print Ribbons). • If using a YMCKO ribbon type, the front of the card is printed with the ribbon's YMC Panels and the back is printed with the K Panel, and the O Panel is printed on the front. • If using a YMCKOK ribbon type, the front of the card is printed with the YMCK Panels and the back is printed with the second K Panel. (**Note #1:** This option is automatically enabled when the YMCKOK ribbon type is selected.)



Using the Print Back Side First option

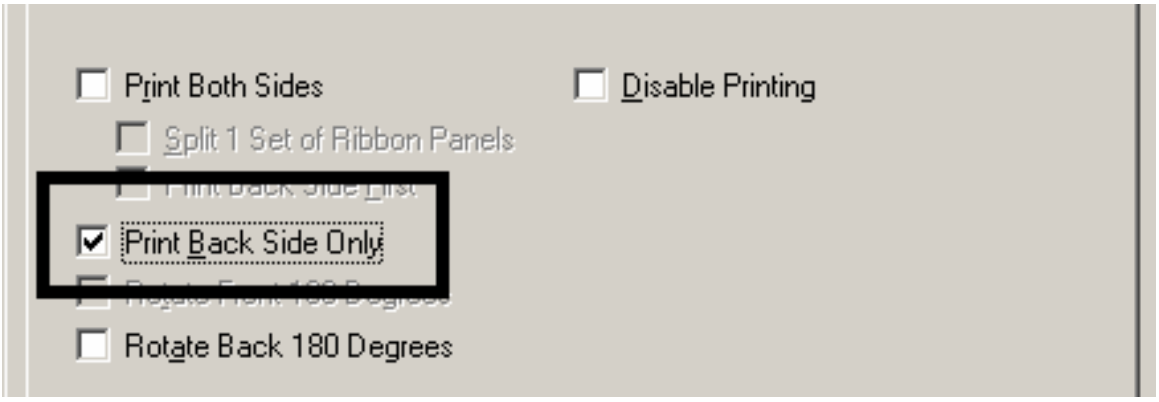
Step	Procedure
1	Select this option: • If you need to print the first page of a two-page document on the backside of the card. **OR** • If you need to print the resin black on the chip-side of the Smartcard. The second page of the document will be printed on the front side of the card.



Using the Print Back Side Only option

Use this option to print only onto the backside of cards.

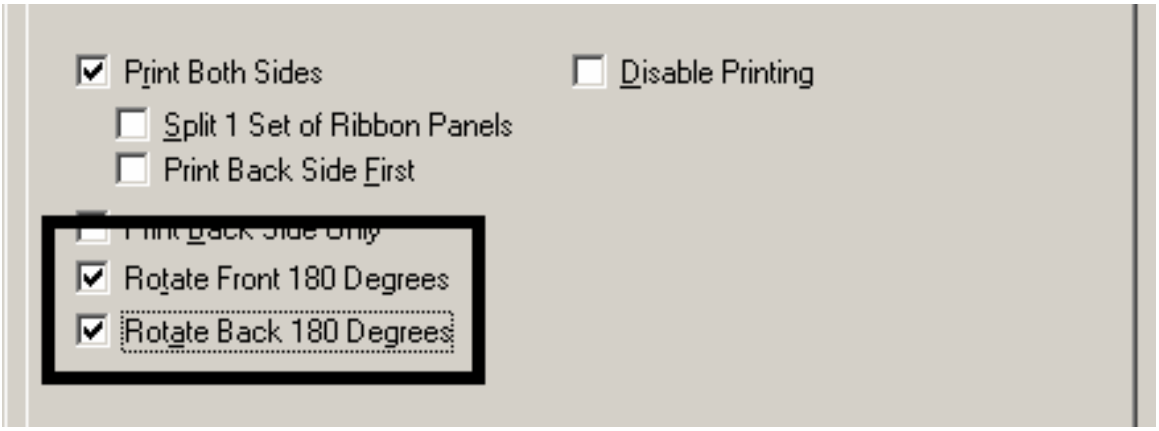
Step	Procedure
1	Select this option to print only onto the back of a card. (**Note:** Load the cards in the usual fashion.) • When this option is selected, the **Print Both Sides** option is automatically disabled. • When attempting to print a two-page document (if **Print Back Side Only** is selected), the first page of the document will print on the backside of the card. • The second page of the document will then be printed on the back of a second card.



Using the Rotate Front 180 Degrees or Rotate Back 180 Degrees options

Use this option to change the position of the printed image in relation to the location of a card's Magnetic Stripe or smart chip.

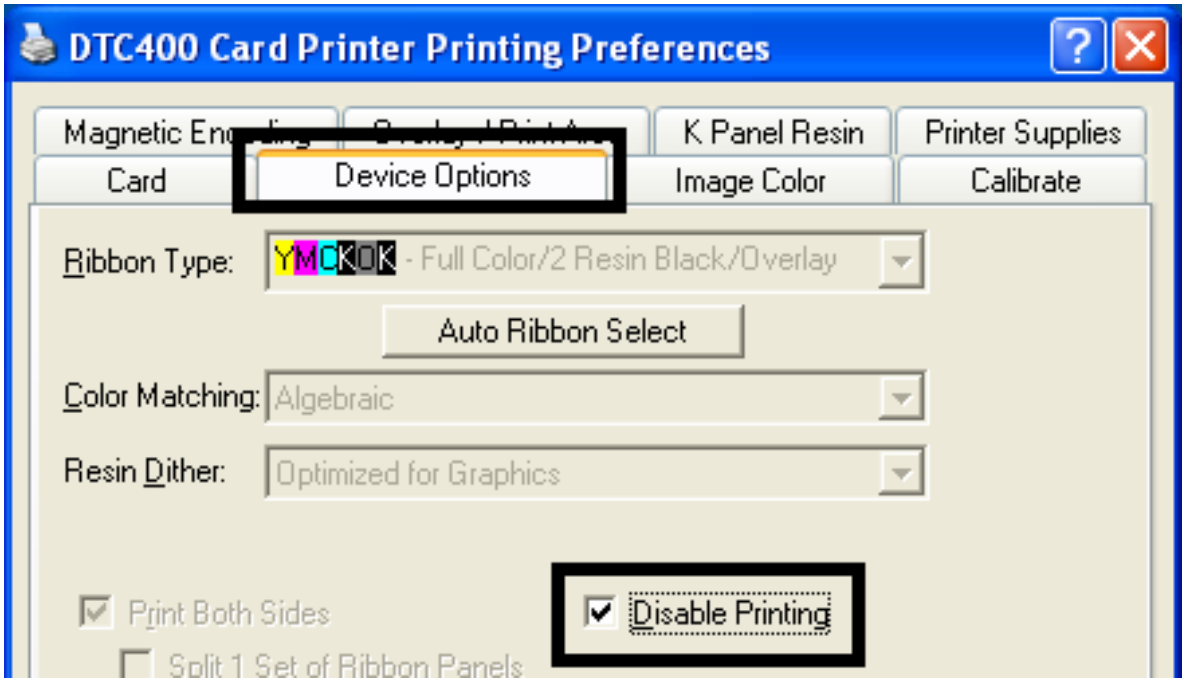
Step	Procedure
1	Select **Rotate Front 180 Degrees** to rotate the image on the front of the card by 180 degrees when printed. **OR** Select **Rotate Back 180 Degrees** to rotate the image on the back of the card by 180 degrees when printed.



Using the Disable Printing option

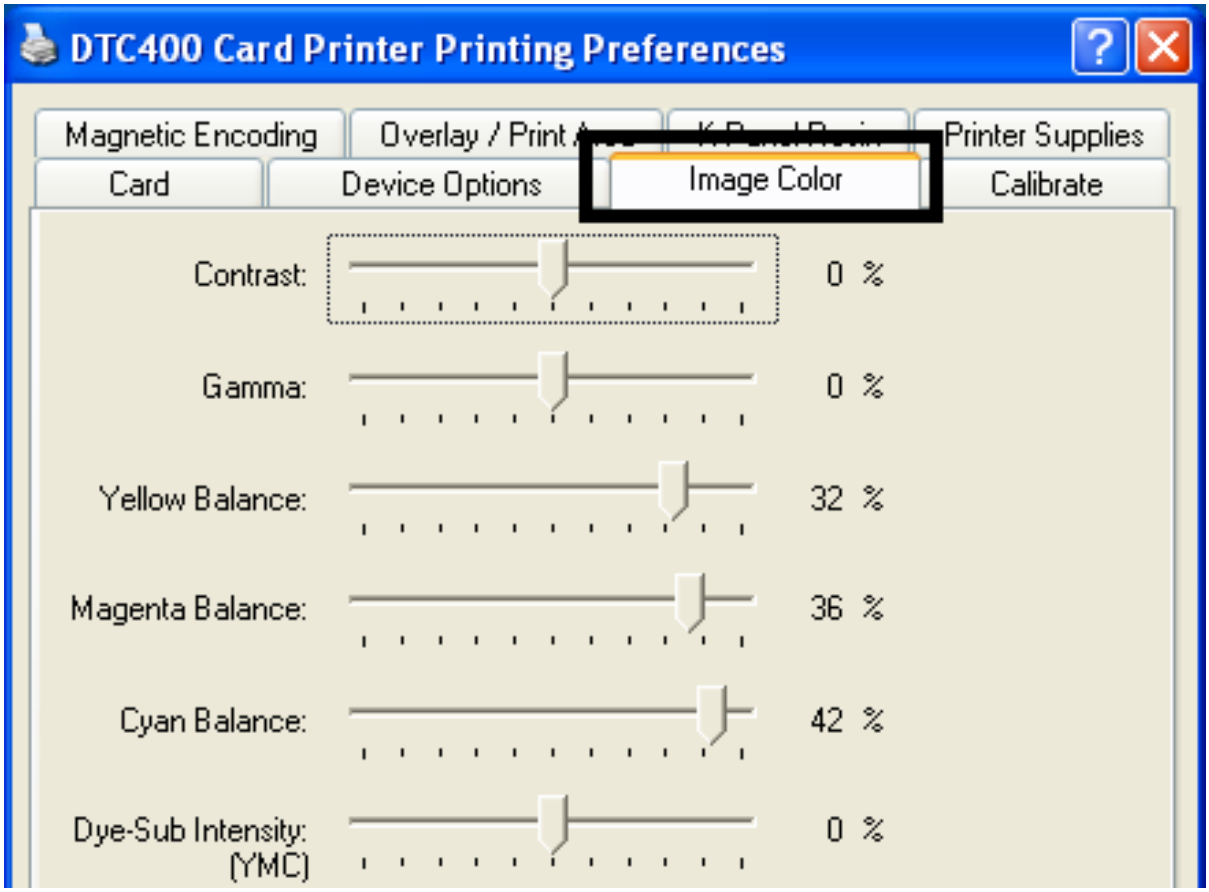
Use this option to disable the printing capabilities of the Printer, yet still allows the Printer to encode cards.

Step	Description
1	Select **Disable Printing** to encode or re-encode cards without wasting additional printing supplies. (**Note:** When this option is selected, no print data will be sent to the Printer. All encoding instructions will be sent according to how they are configured within the software.)



Using the Image Color tab

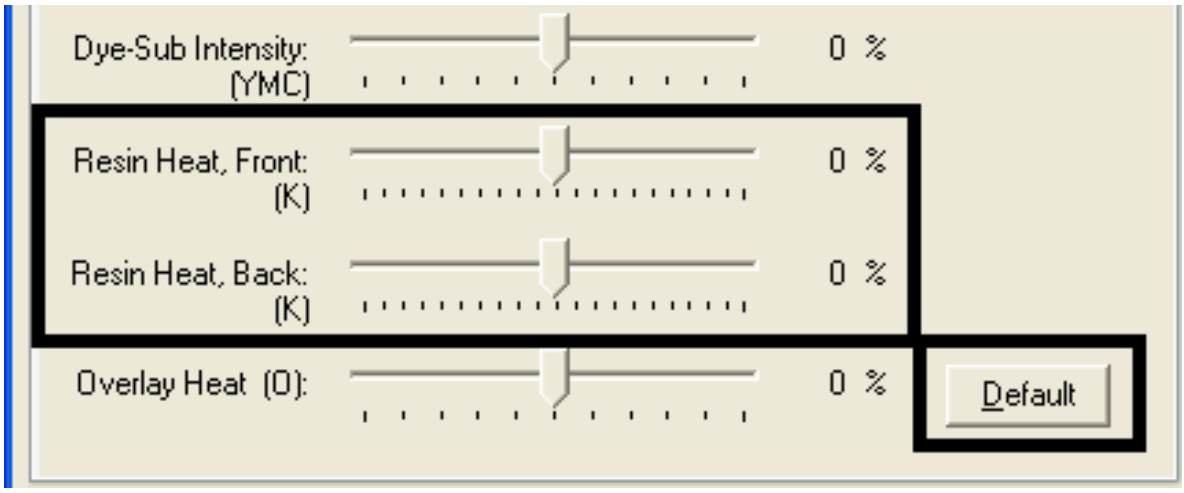
Step	Procedure
1	Select **Algebraic** and then use this option to control the **Contrast** and **Gamma** of the printed image, as well as the individual color balance of **Yellow**, **Magenta** and **Cyan**. (**Note:** In most cases, the default settings of these options will suffice.)
2	Control the overall darkness and lightness of the printed image by adjusting the **Dye-Sub Intensity** slider. • Move the slider to the left to cause less heat to be used in the printing process, thus generating a lighter print. **OR** • Move the slider to the right to cause more heat to be used, thus generating a darker print. (**Note:** This slide only affects those images printed with dye-sublimation Ribbon panels (YMC).)



Using the Resin Heat (K) option (Front and Back)

Use this option to control the amount of heat the Printer uses when printing with the resin black panel(s) of a full-color Ribbon or when printing with a resin-only Ribbon by adjusting the **Resin Heat** slide.

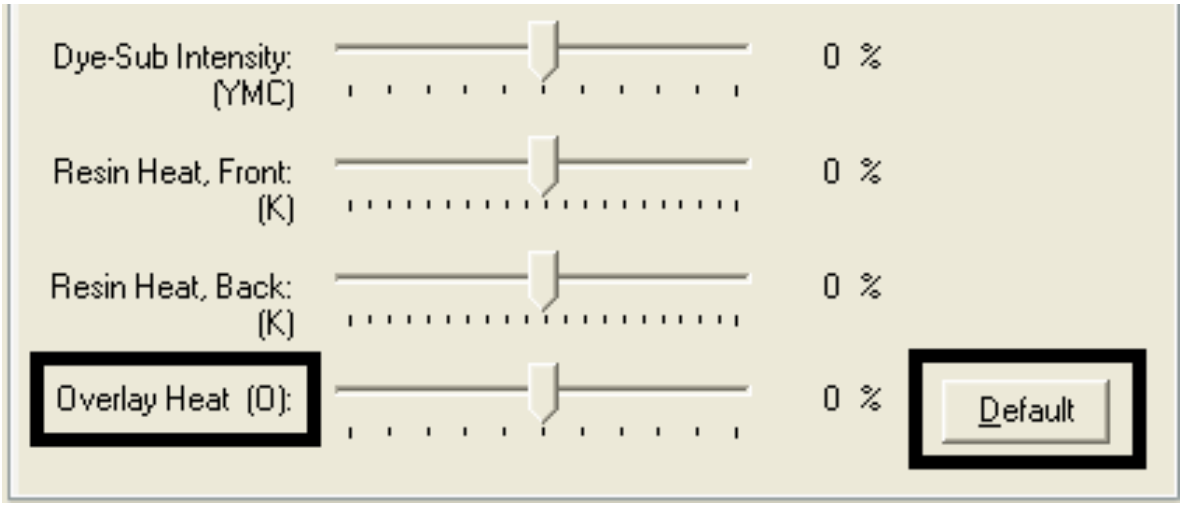
Step	Procedure
1	Adjust the Resin Heat, Front (K) or the Resin Head, Back (K) as needed. • Move the slider to the left to cause less heat to be used in the printing process, causing resin images to be lighter or less saturated. **OR** • Move the slider to the right to (a) cause more heat to be used or (b) cause the resin image to be darker or more saturated. (**Note:** This control can be helpful for fine-tuning the transfer of resin text and bar codes.)



Using the Overlay Heat (O) option

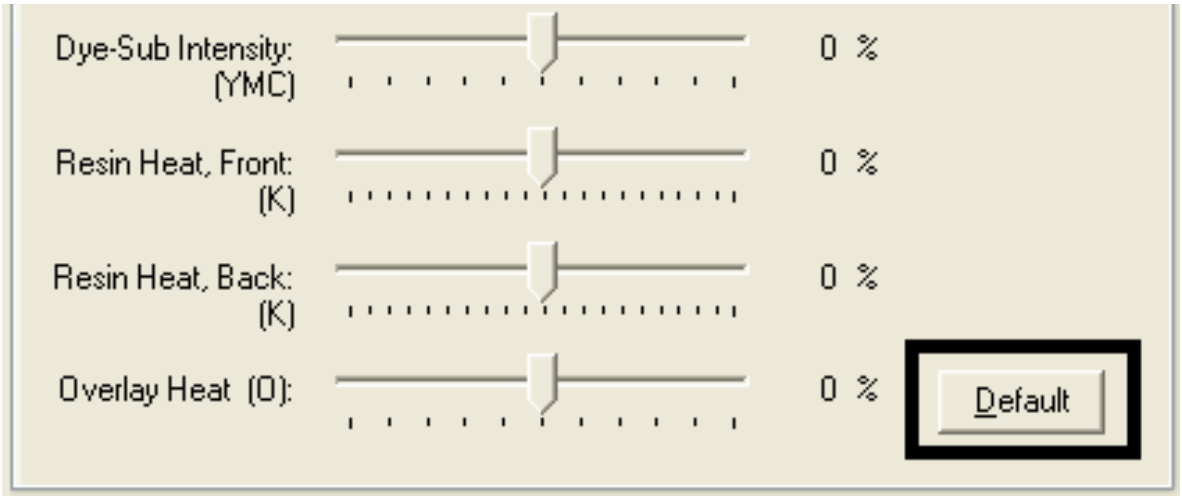
Use this option to control the amount of heat the Printer uses when printing with the overlay panel of a Ribbon.

Step	Procedure
1	• Move the slider to the left to cause less heat to be used in the printing process. (**Note:** Certain card types may need additional heat for better transfer of the overlay material.) **OR** • Move the slider to the right to cause more heat to be used. (**Note:** This control can be helpful for fine-tuning the transfer of overlay onto the card.)



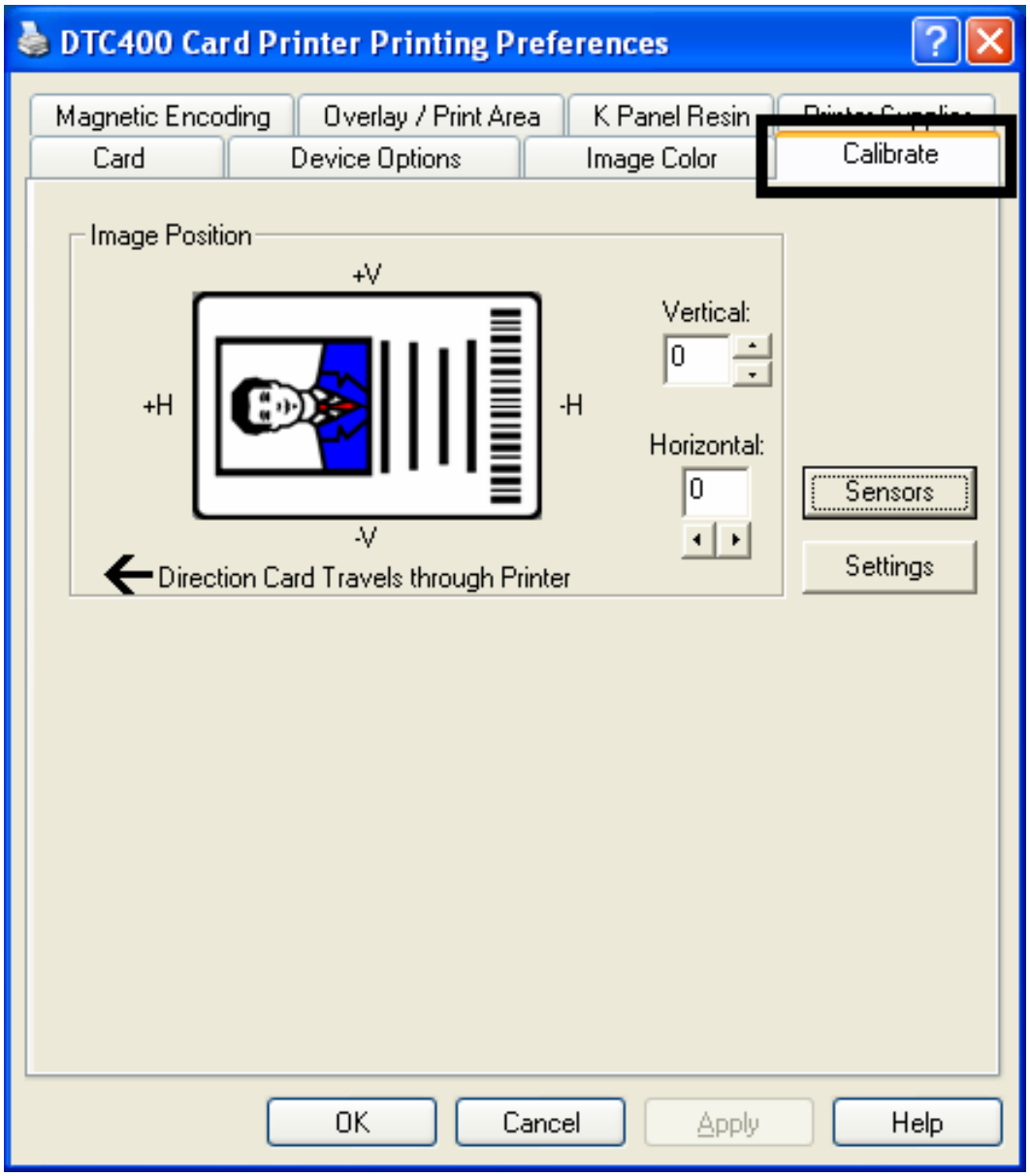
Using the Color Matching option and Default button

Step	Procedure
1	To return all options to their factory settings, click **Default**.



Using the Calibrate tab

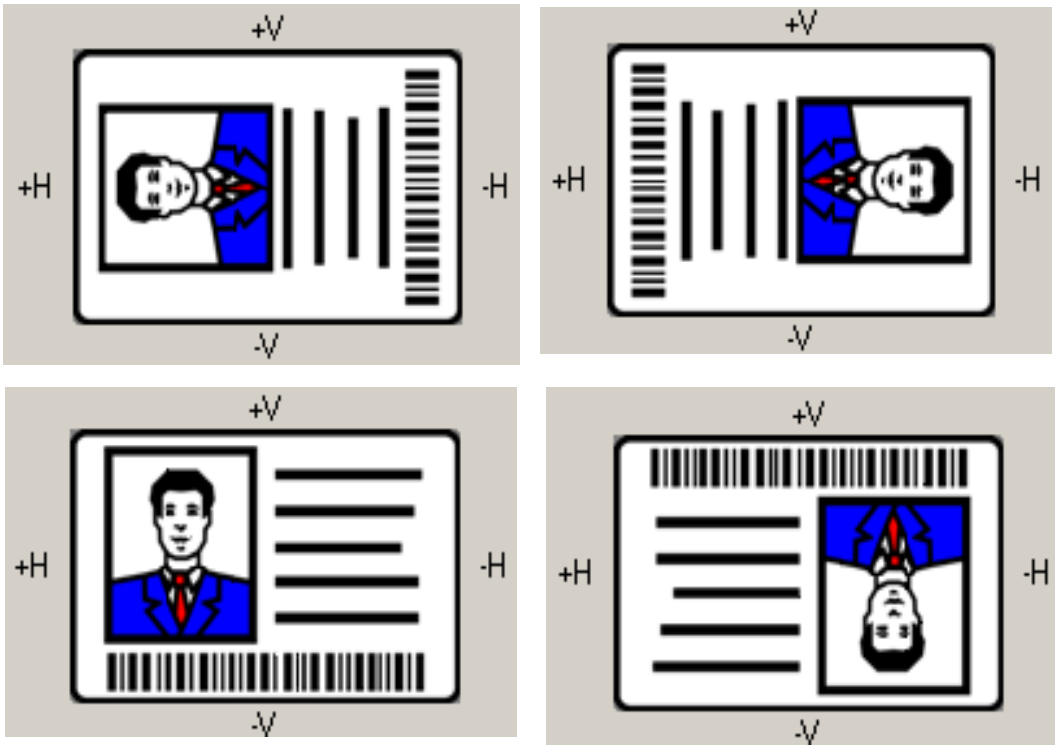
Use the Calibrate tab to (a) control the position of the printable area in relation to the card, (b) calibrate Sensors and (c) adjust the internal Printer settings that are customized for every Printer and saved directly within the Printer's memory.



Using the Image Position Controls

Use the **Image Position** controls to adjust the position of the overall print area to be precisely centered on a card.

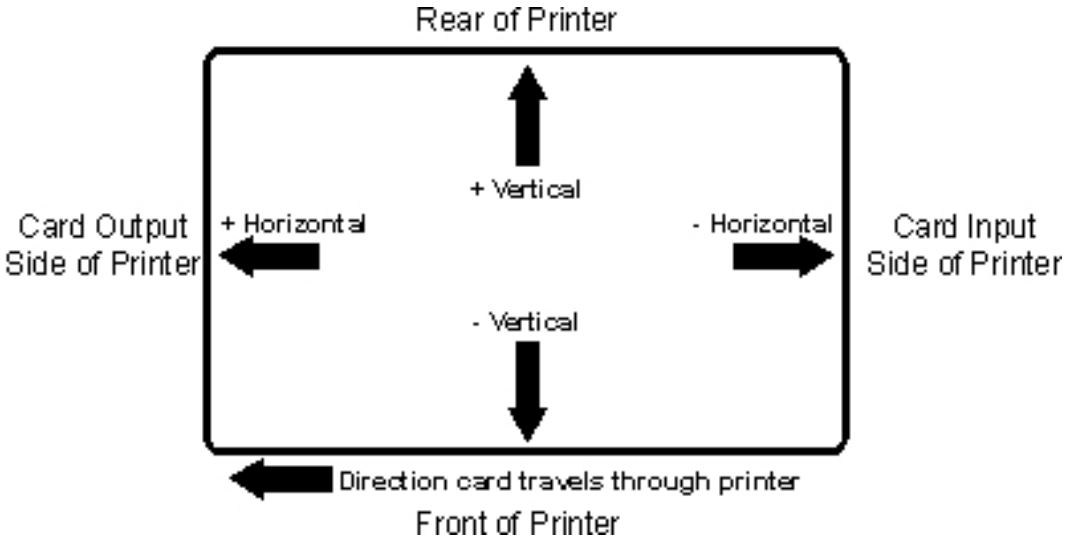
Step	Procedure
1	Click the **Vertical** and **Horizontal** adjustment arrows to adjust the Image Position values. • When adjusting these values, keep in mind that cards always remain in the same position while moving through the Printer, regardless of image orientation. • To illustrate this, the card illustration shown in the Image Position box will flip and rotate according to the **Portrait**, **Landscape**, or **Rotate 180 Degrees** selection. • The outline around the illustration will always remain in the same **Landscape** orientation.



Using the Image Position Controls (continued)

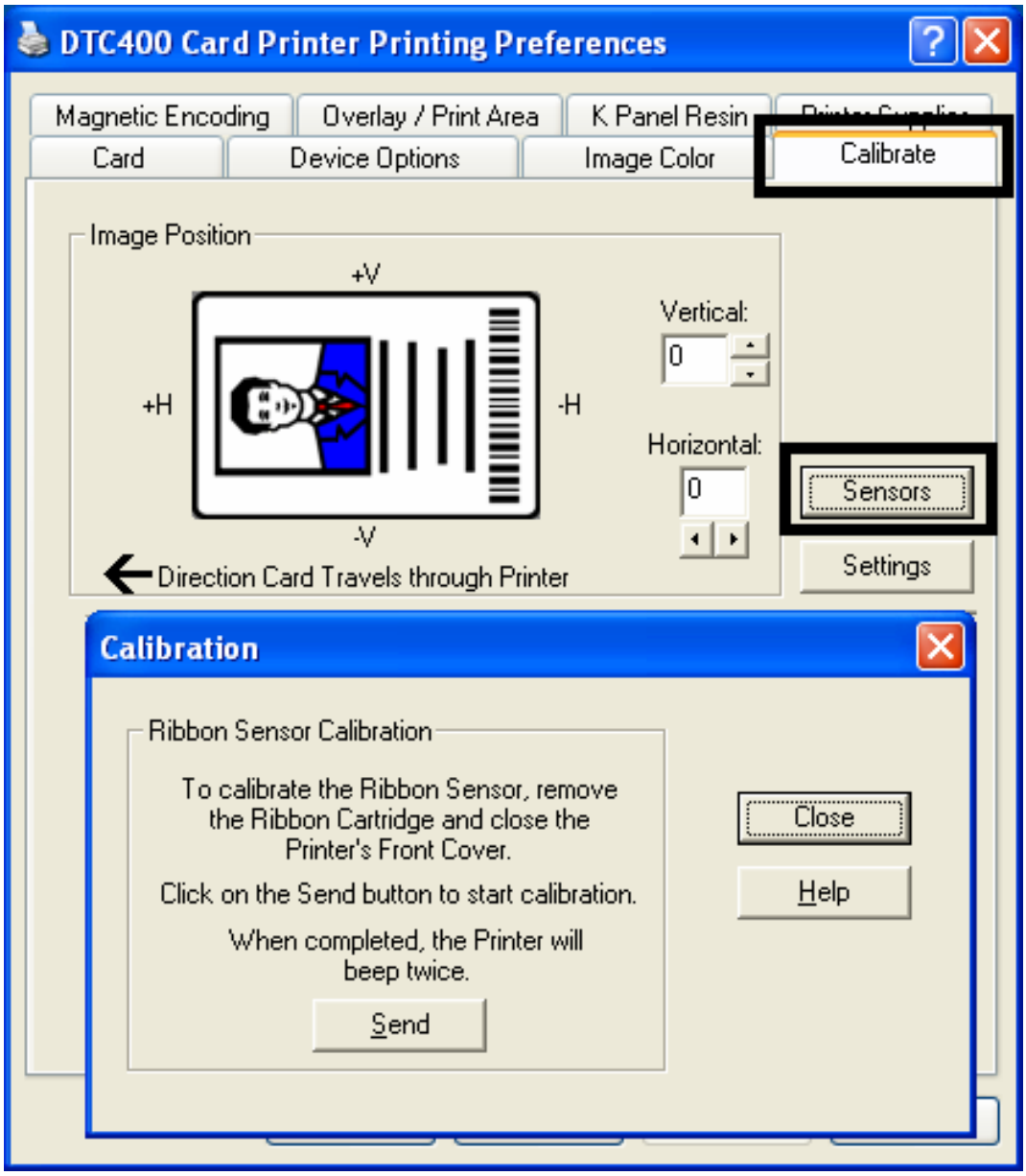
Review the Image Position diagram, which displays how the printed image will move in relation to the fixed card position as positive and negative image placement values are entered.

Step	Procedure
2	Use the **Vertical** adjustment to move the image: • Move toward the rear of the Printer if a positive number is entered. • Move toward the front of the Printer if a negative number is entered. **OR** Use the **Horizontal** adjustment to move the image: • Move toward the card output side of the Printer if a positive number is entered. • Move toward the card input side of the Printer if a negative number is entered. (**Note No.1:** The maximum value for the **Vertical** and **Horizontal** adjustments is ±100 pixels (10 pixels = about .03"/. 8mm).) (**Note No.2:** The **Vertical** and **Horizontal** adjustment arrows point to within the Image Position window, which represents the direction that the printed image moves.)



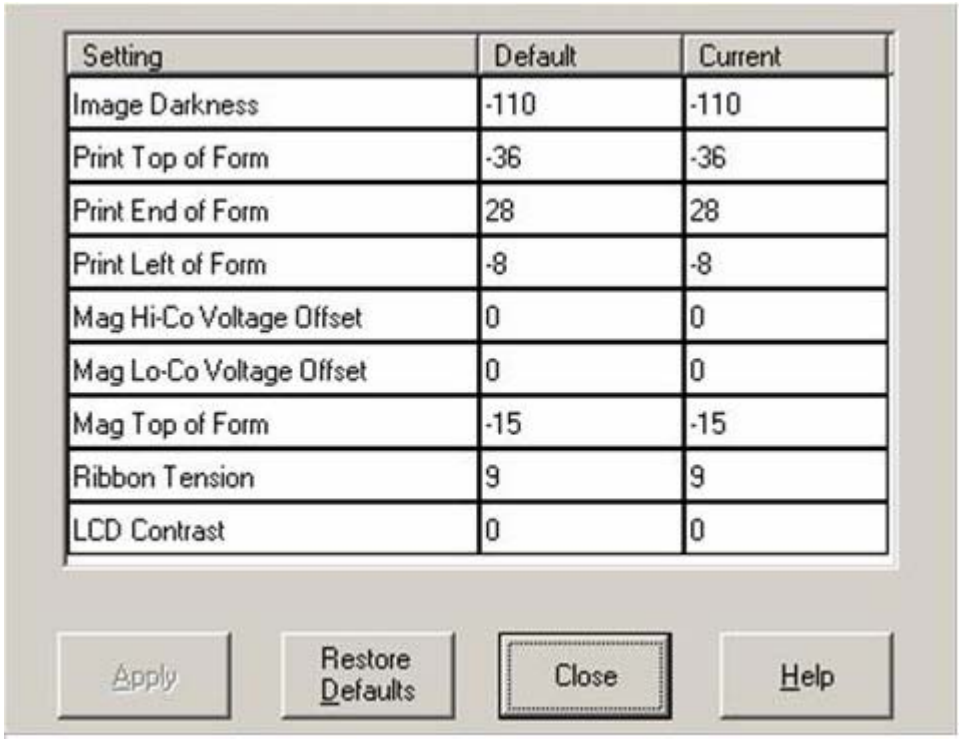
Using the Sensors button

Use the **Sensors** button to bring up a separate dialog box for calibrating the Printer's Ribbon Sensor (see instructions in the Calibration window below).



Using the Settings button

Use the **Settings** button (see above) to bring up a dialog for adjusting the internal Printer settings, which are customized for every Printer at the factory and saved directly within the Printer's memory. (**Note:** You can select the Restore Defaults to restore the internal default settings.)

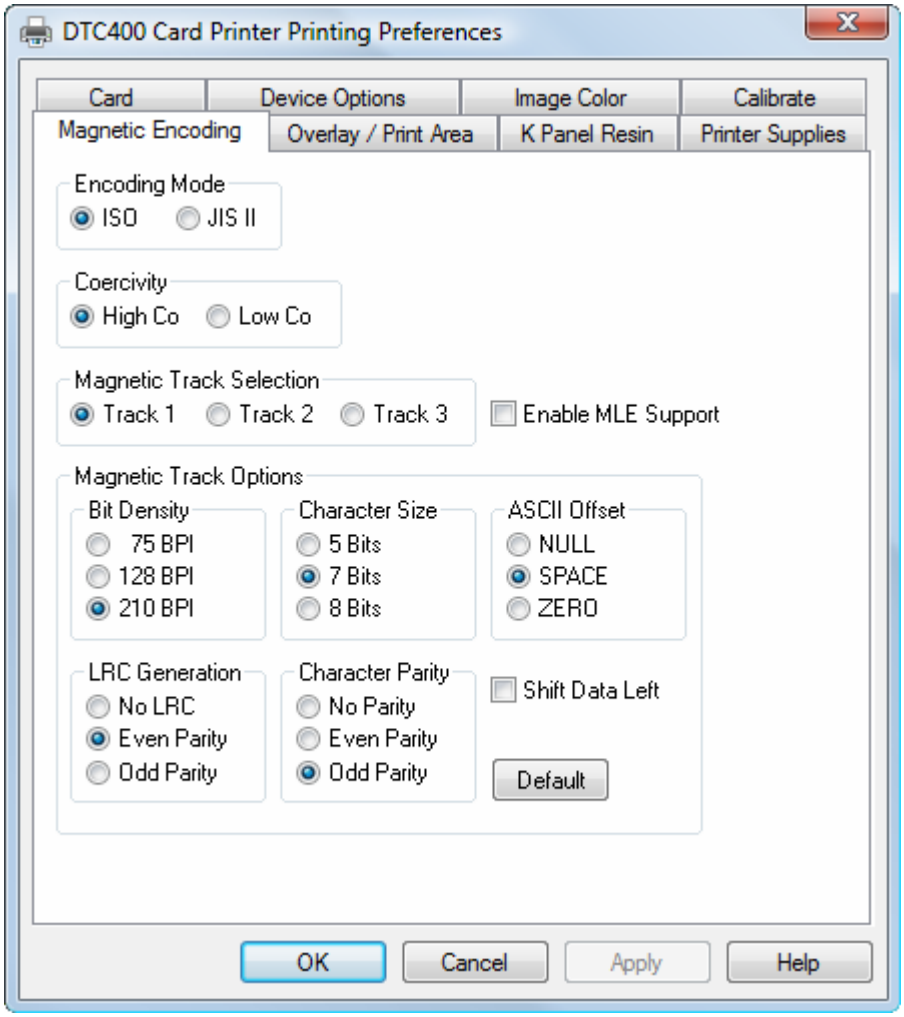


Using the Magnetic Encoding tab

Use this option only if the Printer has an optional Magnetic Stripe Encoding Module installed. The following describes these options and the Printer's magnetic encoding process.

- The Card Printer comes with either a high-coercivity factory-installed Magnetic Stripe Encoding Module or a low-coercivity Module.
- The Printer cannot encode both types of Magnetic Stripes interchangeably within the same Printer.

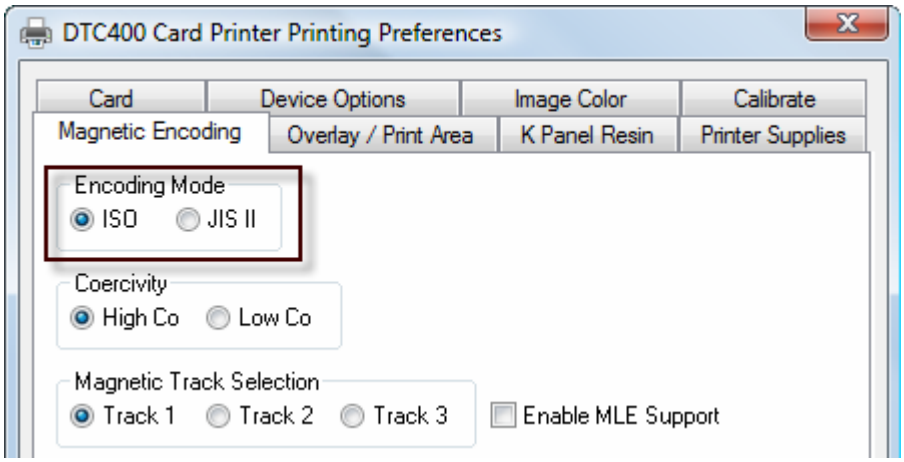
Step	Procedure
1	Select the Magnetic Encoding tab to display options for controlling the Magnetic Stripe encoding process.



Using the Encoding Mode radio buttons

Use the Encoding Mode option to specify the Encoding Mode that the printer is to use when encoding the magnetic stripe on a card.

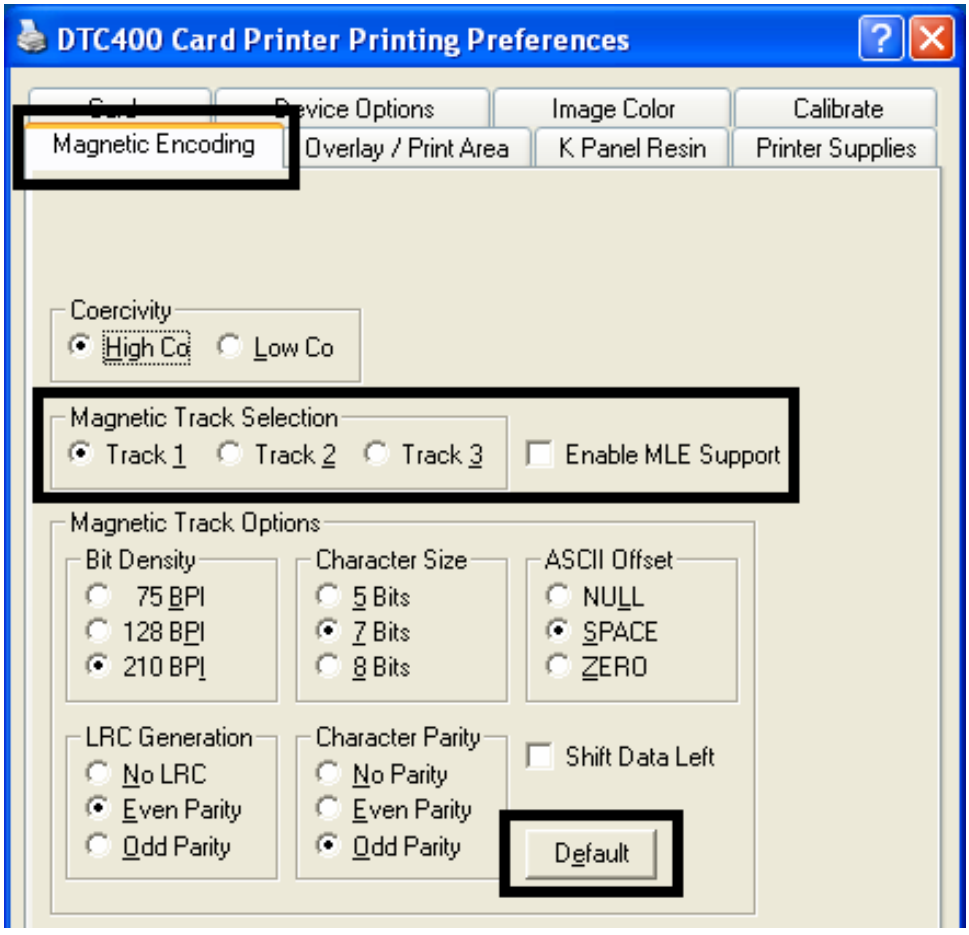
Step	Procedure
1	• Select ISO to encode the magnetic stripe of a card with ISO encoding settings. **OR** • Select JIS II (Japanese Industrial Standard) to encode the magnetic stripe of a card with JIS II encoding settings.



Using the Magnetic Track Selection radio buttons

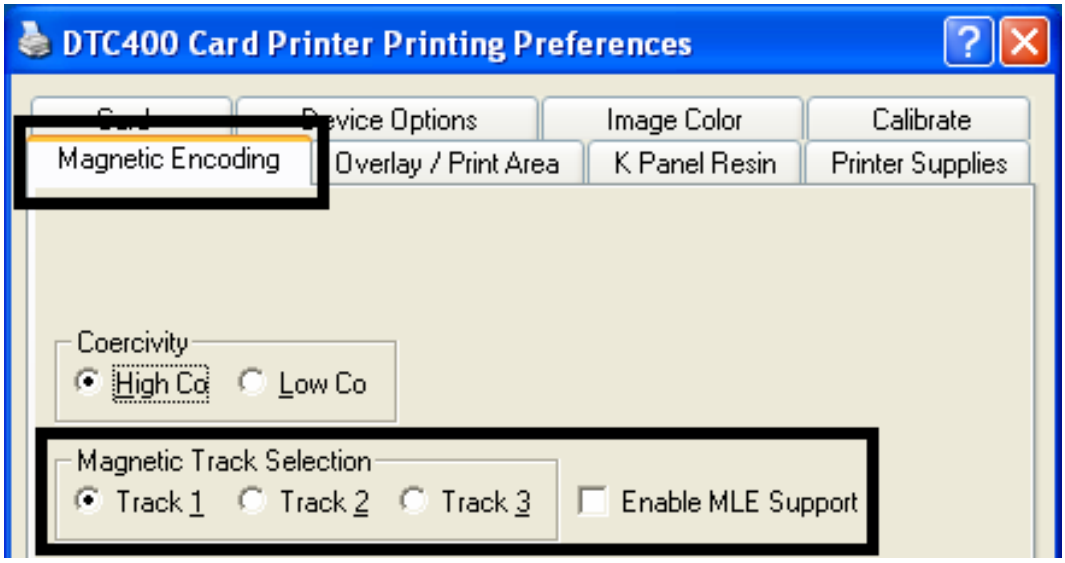
Use the **Magnetic Track Selection** option to specify which track to configure through the Magnetic Track Options if the application requires customization of the standard ISO encoding process. (**Note:** Although the default ISO Magnetic Track Options should be correct for almost all applications, these options can be customized if the application requires it.)

Step	Procedure
1	Select a Track selection to: a. Change all options separately for each of the three individual tracks. b. Select **Default** for each of the separate tracks to set these options back to the ISO Standard settings (once they have been changed). (**Important:** Please refer to the following for a description of all Magnetic Track Options.**)**



Using the Magnetic Track Selection radio buttons (continued)

Step	Procedure
2	Use the **Magnetic Track Selections** to configure the way in which each of the three magnetic tracks will encode. (**Note No.1:** They do not designate which tracks the Printer will encode (e.g., to encode only Track 2). This must be done through the specific software program.) (**Note No.2:** Although the Printer Driver will remember the settings specified for each of the three tracks, the Printer Driver will always default to displaying the options for Track 1 whenever the Printer Driver setup screen is first opened.)



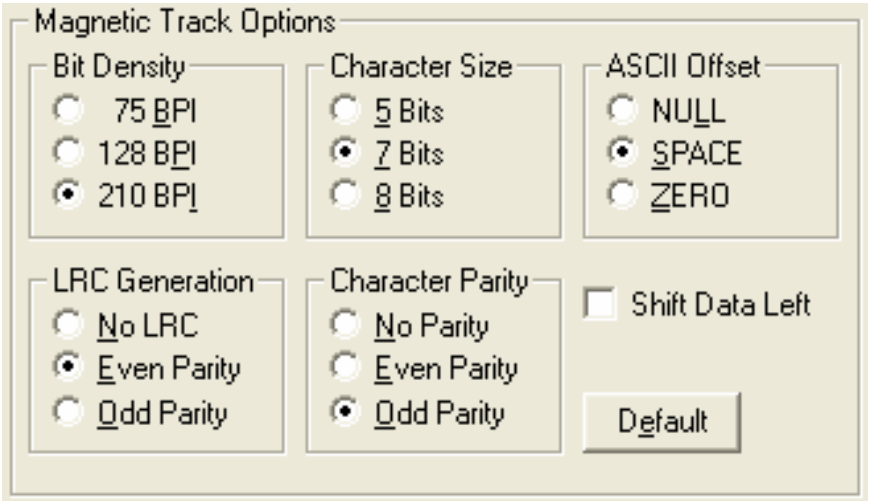
Using the Magnetic Track Options radio buttons

Use the **Magnetic Track** options for these purposes:

- Customize the ISO encoded data format for each of the Magnetic Stripe's three tracks.
- Customize each track independently of the other two.
- Specify which of the three tracks to customize by selecting one of the three track options.

(**Note No.1:** After making the required selection, the Magnetic Track Options box displays the current set of customization options for the selected track.)

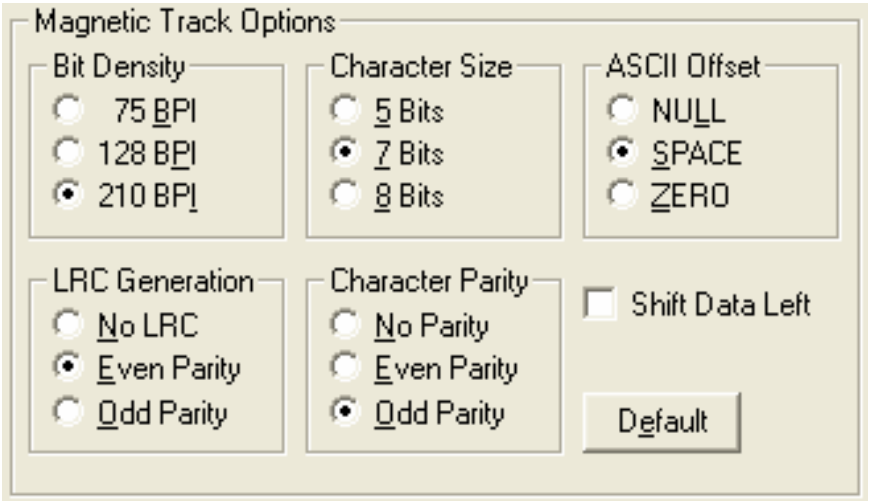
(**Note No.2:** For most applications, the default settings for these options do not need to be changed.)



Using the Bit Density radio buttons

Use this option to customize the Bit Recording Density (Bits per Inch) used to encode the magnetic data on the currently selected track.

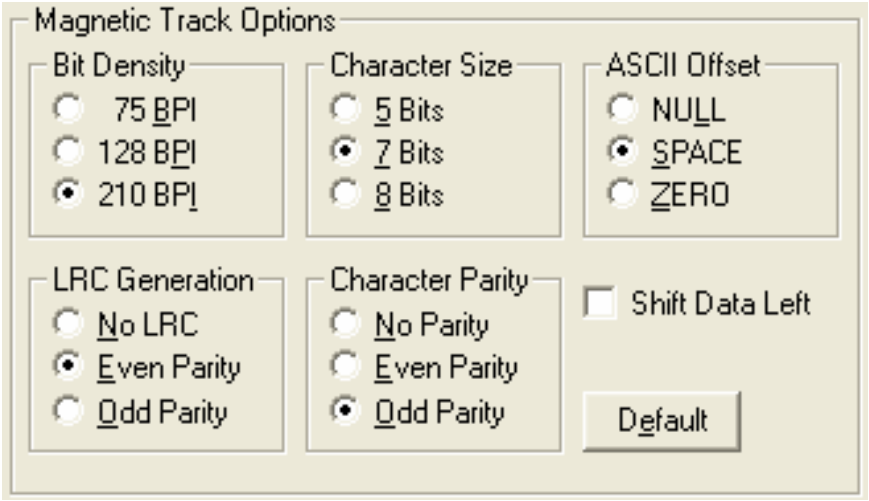
Step	Procedure
1	Select 75 BPI to change the bits per inch to 75 BPI. **OR** Select 128 BPI to change the bits per inch to 128 BPI. **OR** Select 210 BPI to change the bits per inch to 210 BPI.



Using the Character Size radio buttons

Use this option to customize the Character Data Size (Bits per Character) used to encode the magnetic data on the currently selected track. (**Note:** This character size includes the parity bit (if enabled).)

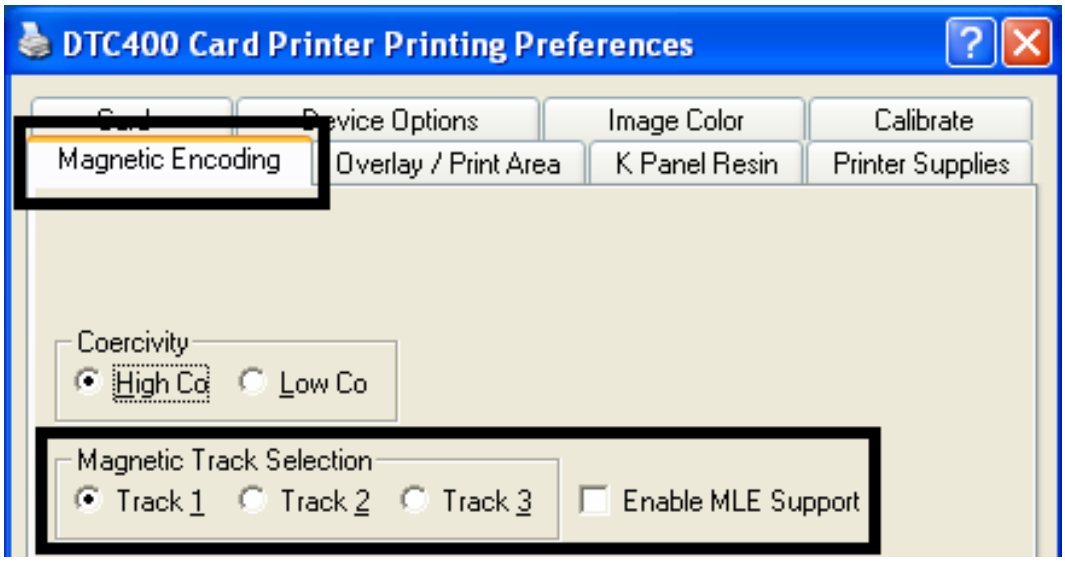
Step	Procedure
1	Select 5 Bits to change the bits per character to 5 BPC. **OR** Select 7 Bits to change the bits per character to 7 BPC. **OR** Select 8 Bits to change the bits per character to 8 BPC.



Reviewing the Enable MLE Support checkbox

Multi-Language Extension (MLE) support in Windows XP can cause text strings to be broken up into fragments. This fragmentation of the text string prevents magnetic encoding. (**Note:** This option may help correct encoding problems in all operating systems.)

Step	Procedure
1	Check this box to allow the Driver to process the fragmented text.



Using the ASCII Offset radio buttons

Use this option to customize the Character ASCII Offset used to encode the magnetic data on the currently selected track. (**Note:** This character offset value is subtracted from the ASCII value of each Magnetic Stripe data character prior to encoding on the track.)

Step	Procedure
1	Select **NULL** to change the ASCII Offset to NULL. **OR** Select **SPACE** to change the ASCII Offset to SPACE. **OR** Select **ZERO** to change the ASCII Offset to ZERO.

Using the LRC Generation radio buttons

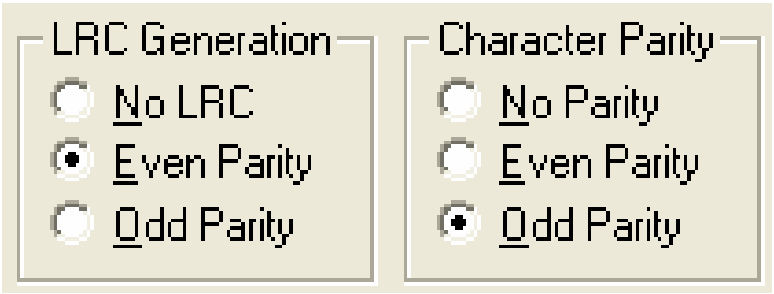
Use this option to customize the LRC Generation Mode (used to encode the magnetic data on the currently selected track).

Step	Procedure
1	Select **NO LRC** to change the LRC Generation to none. **OR** Select **Even Parity** to change the LRC Generation to Even Parity. **OR** Select **Odd Parity** to change the LRC Generation to Odd Parity.

Using the Character Parity radio buttons

Use this option to customize the Character Data Parity (used to encode the magnetic data on the currently selected track).

Step	Procedure
1	Select **No Parity** to change the Character Parity to none. **OR** Select **Even Parity** to change the Character Parity to Even Parity. **OR** Select **Odd Parity** to change the Character Parity to Odd Parity



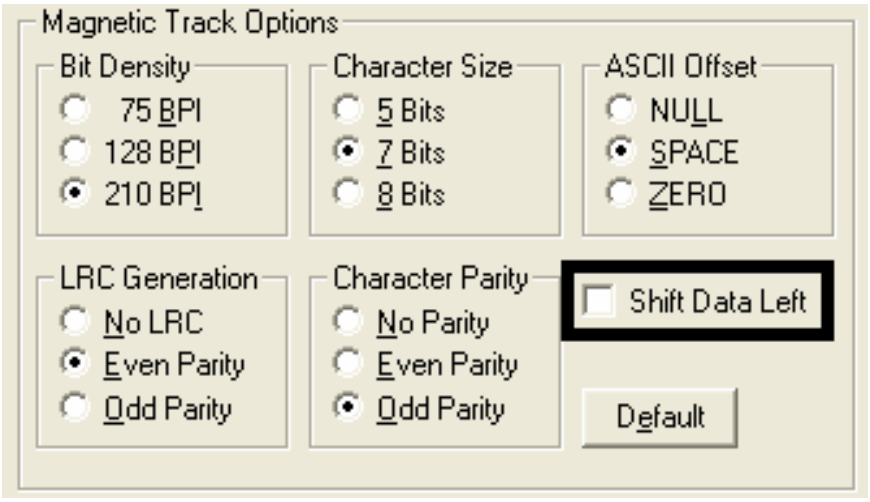
Using the Shift Data Left checkbox

Use this option to shift the recorded magnetic data to the left-hand side of the card's Magnetic Stripe.

OR

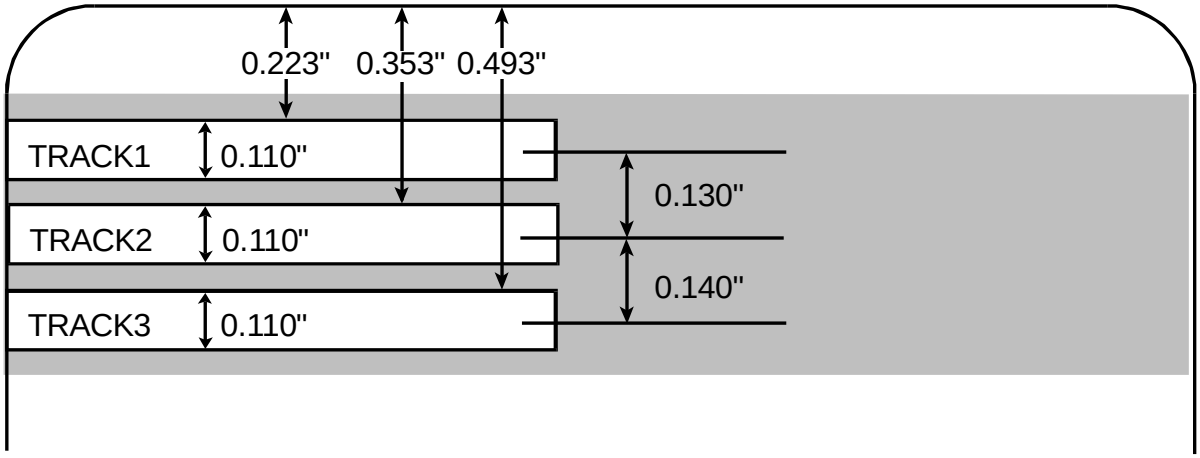
Use this option for situations that require cards to be readable with insert type readers that may be unable to read the right-hand side of the card.

Step	Procedure
1	Select the **Shift Data Left** checkbox option to apply to all tracks.



Reviewing the ISO Track Locations

Review the magnetic encoding Module, which encodes onto tracks in accordance with an ISO 7811-2 Magnetic Stripe. (**Note:** Refer to the diagram (below) for track locations.)



Sending the Track Information

Magnetic track data is sent in the form of text strings from the application software to the Printer Driver along with all of the other printable objects within the card design.

- **Magnetic Track Data added:** In order for the Printer Driver to differentiate between magnetic track data and the rest of the printable objects, the magnetic track data strings must be uniquely tagged or added.
- **Specific Characters added:** In other words, specific characters must be added to the magnetic track data in order for the Printer Driver to know which data is to be encoded, which tracks to encode, when the track data stops and starts and so forth.
- **Manually or automatically added:** In some cases, these specific characters are automatically added to the string of track data by customized ID software applications. In most cases, however, the User must manually add these characters to the string of magnetic track data.

Entering the Track Information

(**Note:** If these characters are not added to the track data, the text intended for the magnetic track will most likely appear as printed text on the card.)

Step	Procedure
1	To avoid this symptom, track information must be entered as follows. When entering track data, the "~" character is entered first, followed by the desired track number (1, 2, or 3) used to encode the data. • The data to be encoded should then follow. (**Note:** The first character of this data string must be the track's specific Start Sentinel (SS) and the last character must be the specific End Sentinel (ES).) • The characters or data in between the SS and ES can include all of the valid characters specific to each track. (**Note:** The number of these characters is limited by each track's maximum character capacity.) **Caution:** When segmenting track data, strictly use the appropriate Field Separator (FS).

Reviewing Tracks 1, 2 and 3 (in table format)

Review this table, which displays the SS, ES, FS and the valid characters defined for each track.

	Start Sentinel	End Sentinel	Field Separator	Valid Characters	Maximum Number of Characters
Track 1	%	?	^	ASCII 32-95 (See the table below.)	78
Track 2	;	?	=	ASCII 48-63 (See the table below.)	39
Track 3	;	?	=	ASCII 48-63 (See the table below.)	106

Reviewing the Track Data Note

Review this Note, which displays how track the data should be entered for Tracks 1, 2 and 3:

Track	Data Entry
Sending data to Track 1	**~1%JULIE ANDERSON^623-85-1253?**
Sending data to Track 2	**~2;0123456789?**
Sending data to Track 3	**~3;0123456789?**

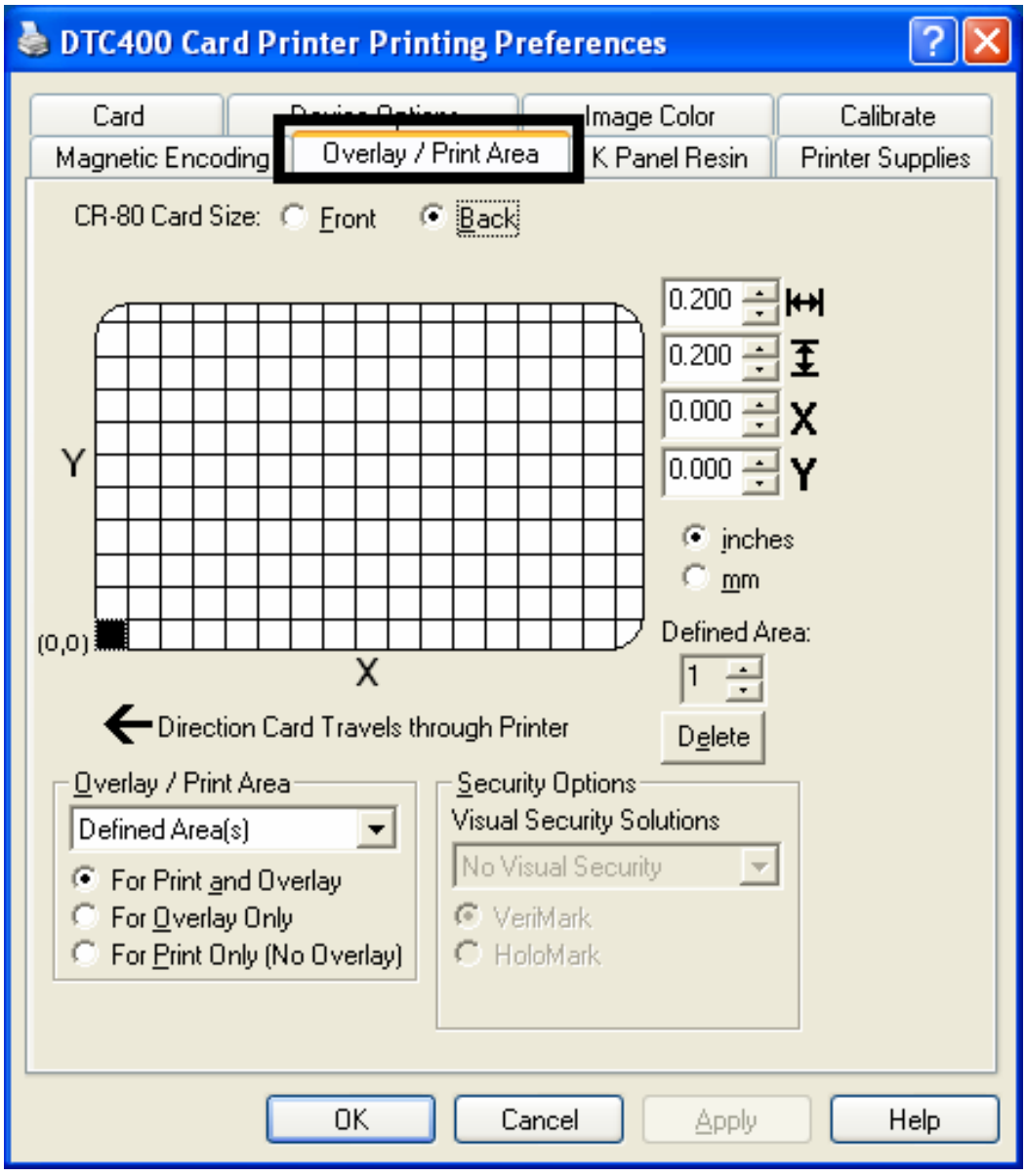
Reviewing the ASCII Code and Character Table

ASCII Code	Character	ASCII Code	Character	ASCII Code	Character
32	space	56	8	80	P
33	!	57	9	81	Q
34	"	58	:	82	R
35	No.	59	;	83	S
36	$	60	<	84	T
37	%	61	=	85	U
38	&	62	>	86	V
39	'	63	?	87	W
40	(	64	@	88	X
41	)	65	A	89	Y
42	*	66	B	90	Z
43	+	67	C	91	[
44	'	68	D	92	\
45	-	69	E	93	]
46	.	70	F	94	^
47	/	71	G	95	_
48	0	72	H		
49	1	73	I		
50	2	74	J		
51	3	75	K		
52	4	76	L		
53	5	77	M		
54	6	78	N		
55	7	79	O		

Using the Overlay / Print Area tab

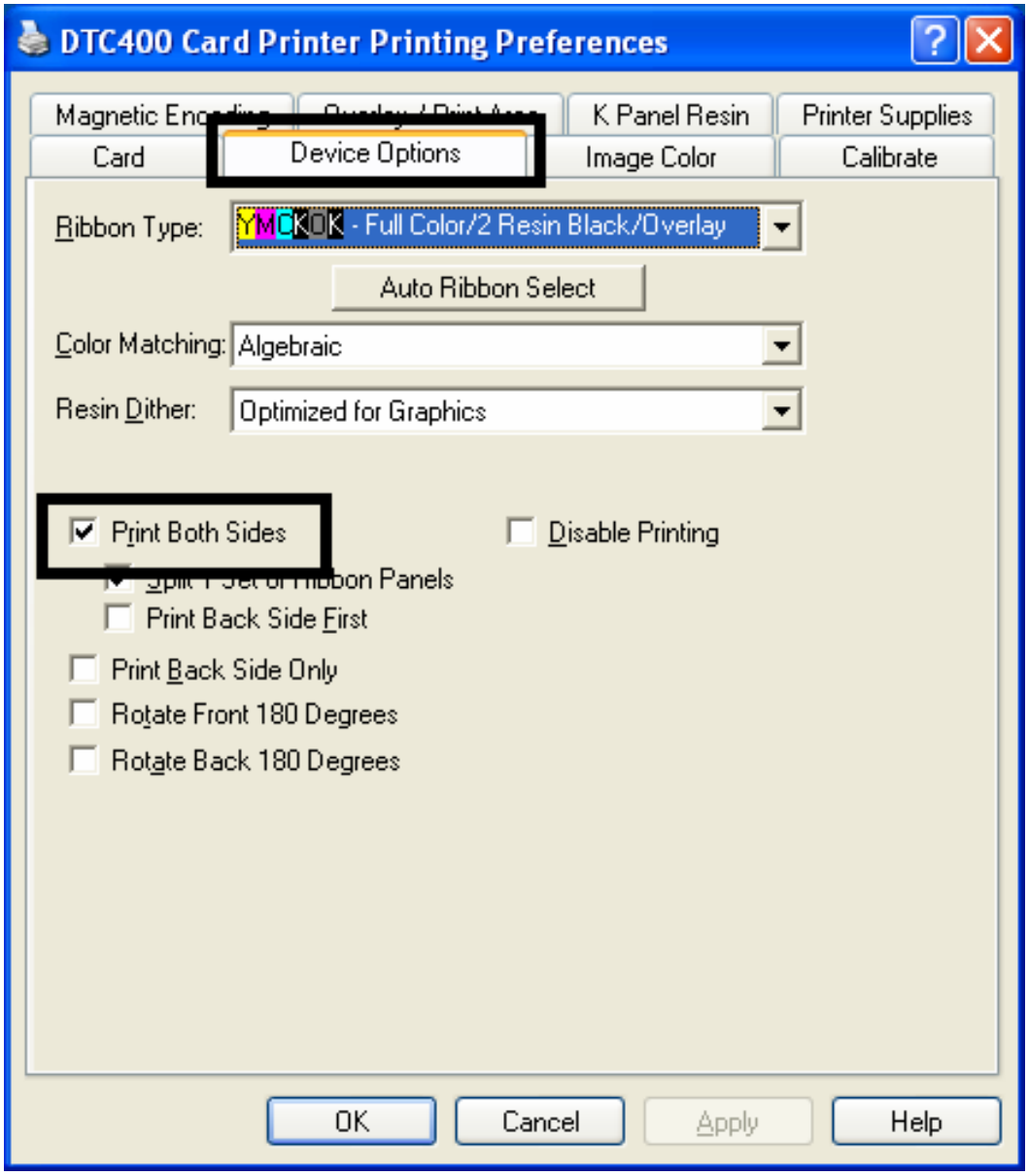
Use this option to control where the Overlay (O) Panel and/or the print area appear on a card. (**Note:** This option is helpful if, for example, you would like to omit or block out the overlay or printing around a card's smart chip or Magnetic Stripe.)

By default, this option is set to print and overlay the entire card. To customize the overlay and/or print area, select one of the options listed under "Overlay / Print Area."



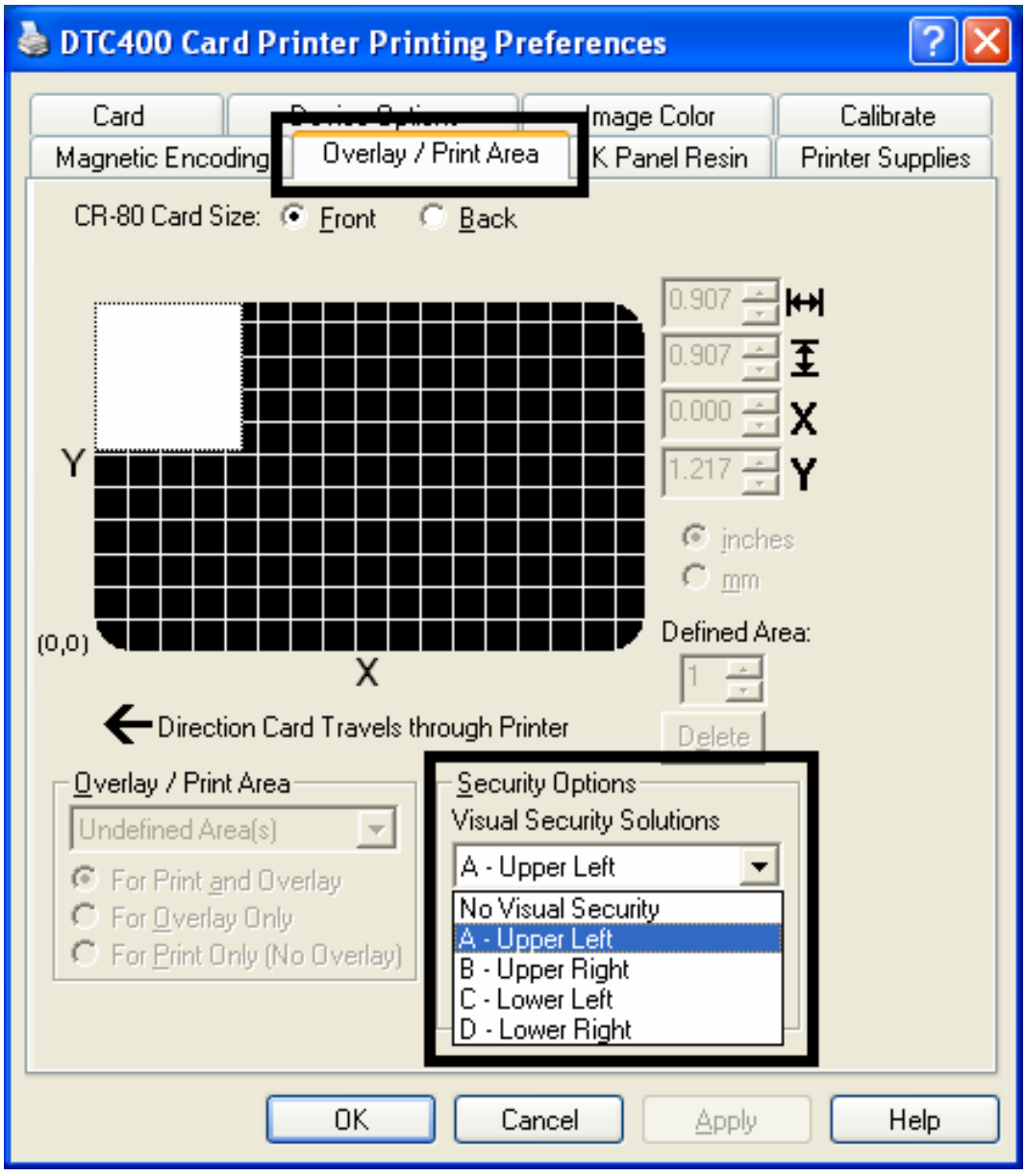
Using the Front and Back options

Step	Procedure
1	Select **Print Both Sides** under the Device Options tab to enable the Back option under the Overlay / Print Area. (**Note:** This same selection applies to the K Panel Resin back option.)



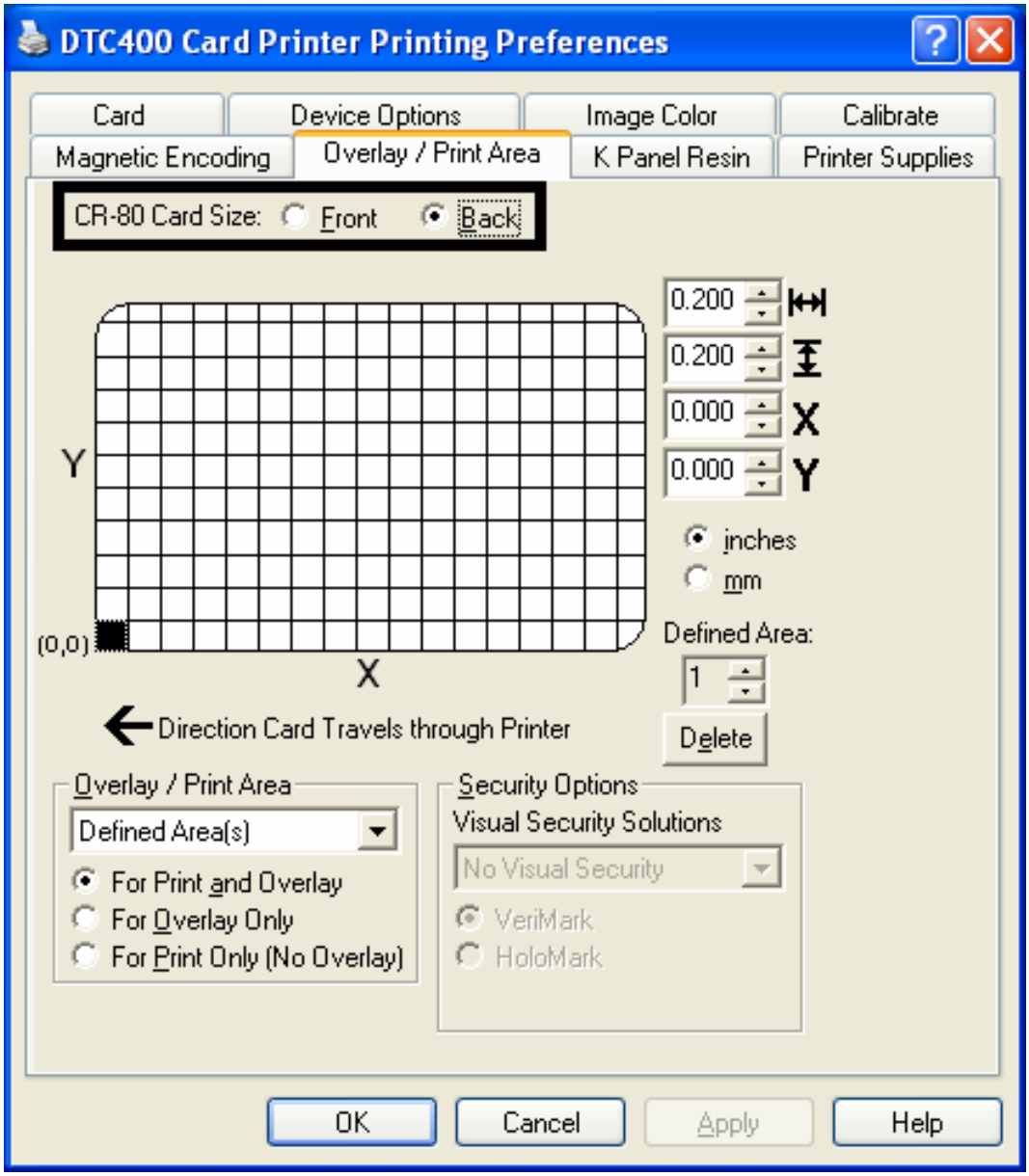
Using the Front option (Overlay / Print Area)

Step	Procedure
1	Select **Front** to view the Overlay/Print Area options for the front of the card.



Using the Back option (Overlay / Print Area)

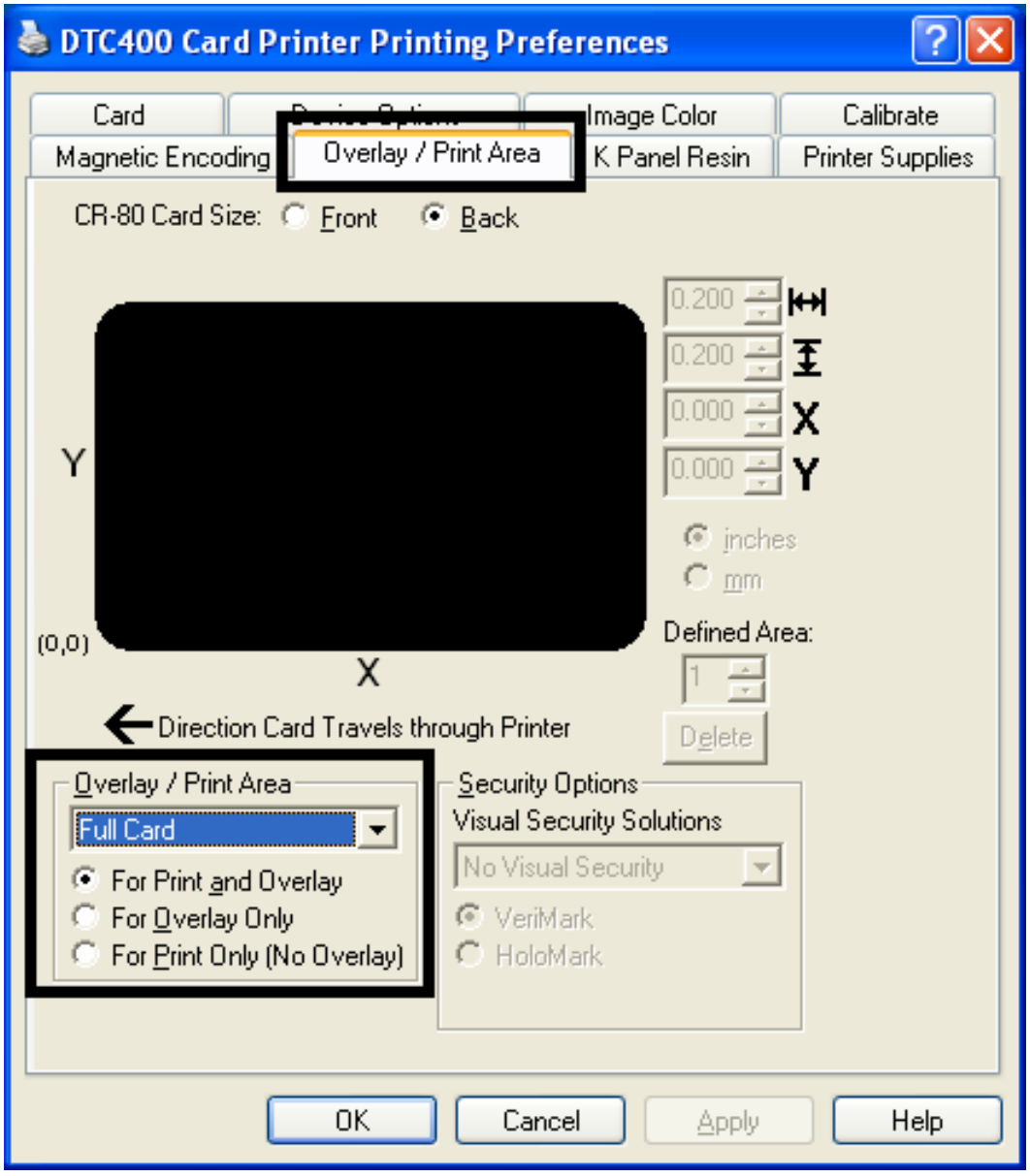
Step	Procedure
1	Select **Back** to view the Overlay/Print area options for the back of the card. (**Note:** The Back option is only available if Print Both Sides is selected.)



Using the Overlay / Print Area dropdown menu

Step	Procedure
1	Select **Full Card** for the Printer to overlay and/or print the entire card. **OR** Select **Defined Area(s)** for the Printer to overlay and/or print only in the selected and defined area or areas. **OR** Select **Undefined Area(s)** for the Printer to overlay and/or print only in the space outside the selected and defined area. **OR** Select **Omit Smart Chip Area** for the Printer to overlay and/or print only in the space outside the standard location of a smart chip. **OR** Select **Omit Magnetic Stripe Area** for the Printer to overlay and/or print only in the space outside the standard location of an ISO Magnetic Stripe. **OR** Select **Omit Signature Area** for the Printer to overlay and/or print only in the space outside the standard location of a signature panel. (**Note:** In the card grid, black indicates the area in which the overlay and/or printing will be applied.)

Using the Overlay / Print Area dropdown menu (continued)

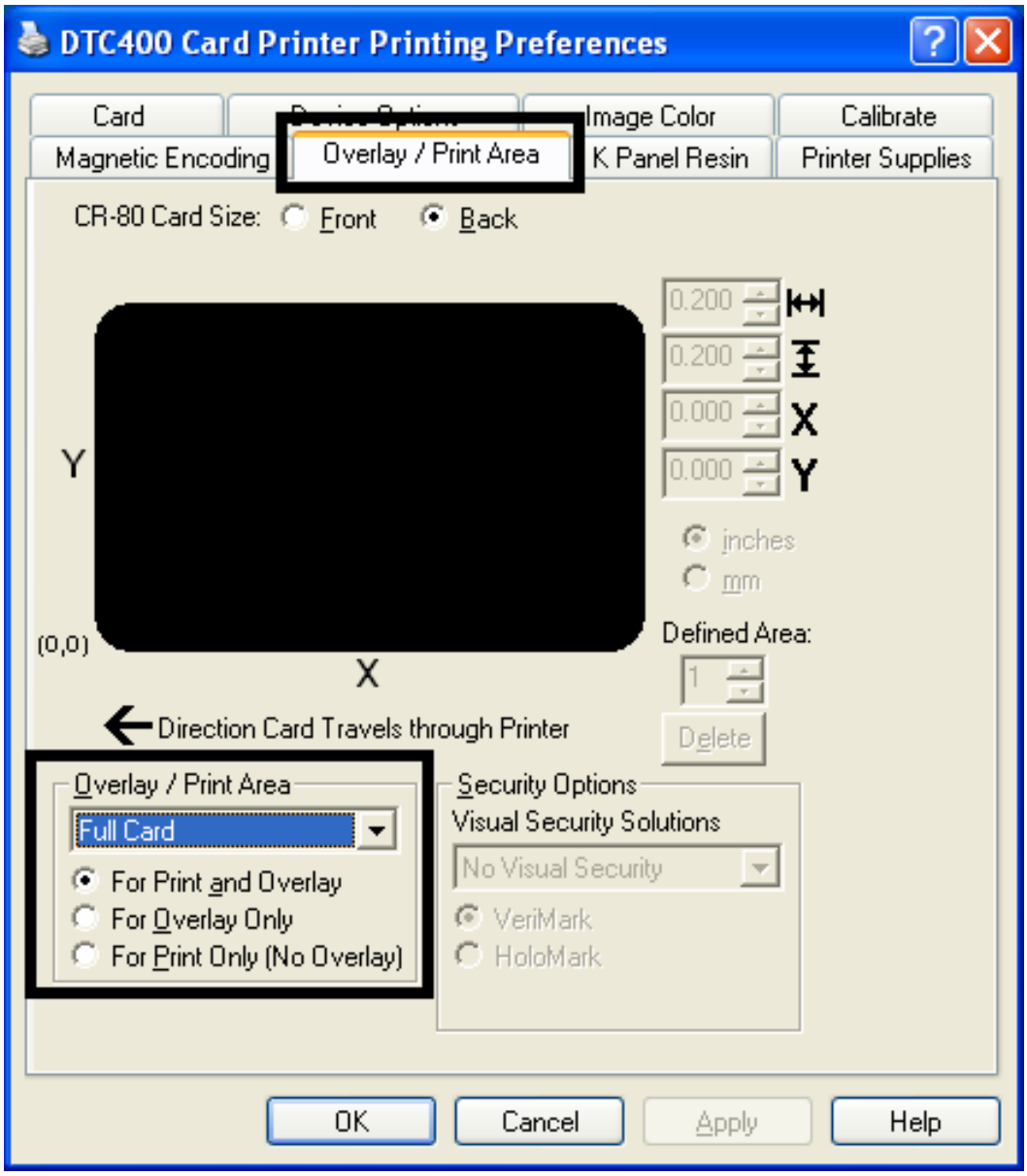


Using the Overlay / Print Area

Use these **Overlay / Print Area** options to control both the print and overlay together or control each individually. (**Note:** Determine whether to use the Frontside option (via the **Front** radio button) or the Backside option (via the **Back** radio button).)

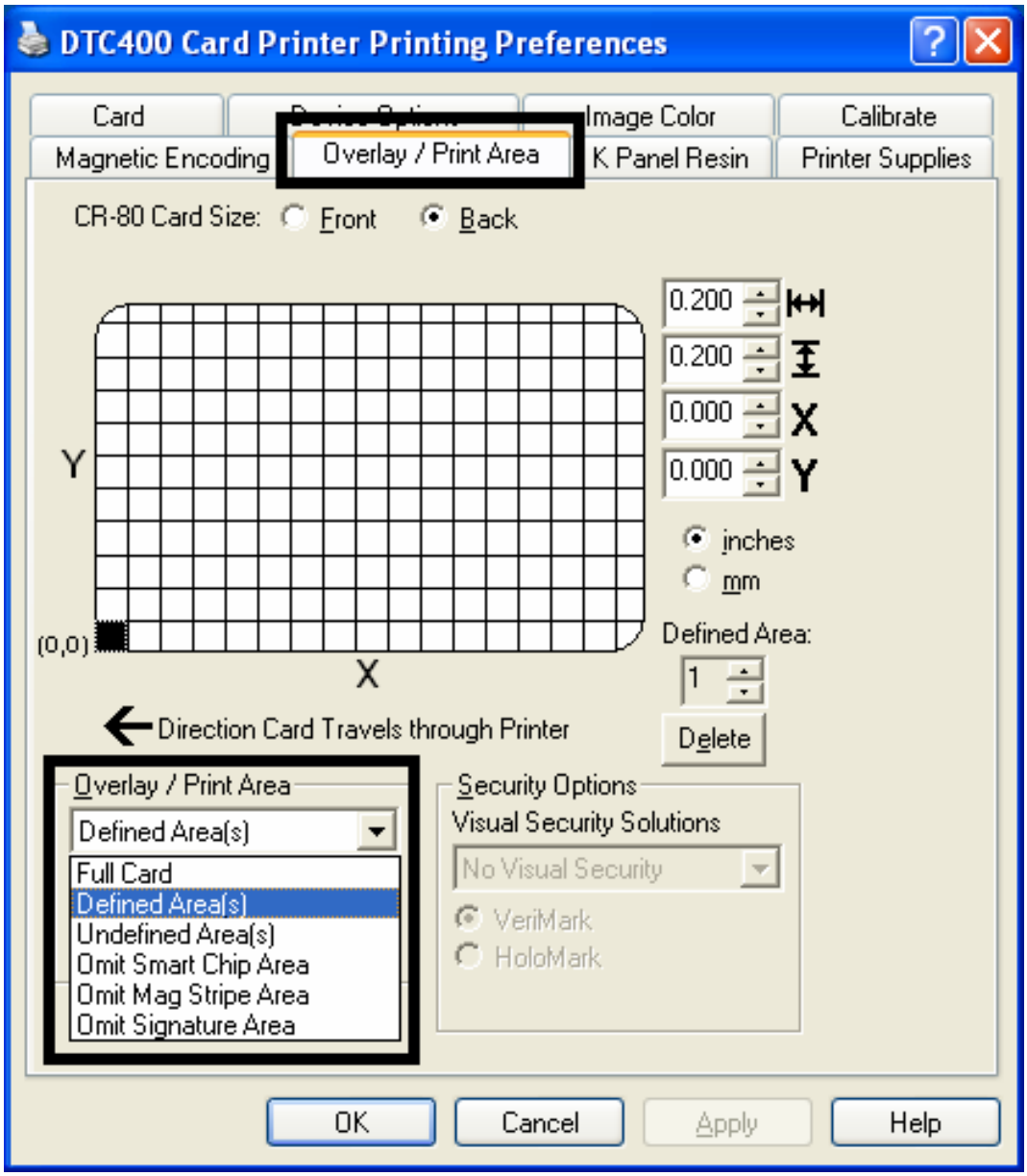
Step	Procedure
1	Select **For Print and Overlay** for the defined area to apply to both the printing and overlay process. **OR** Select **For Overlay Only** for the defined area to apply only to the overlay process. (**Note:** In this mode, printing will still be allowed over the entire card and only the overlay will be affected.) **OR** Select **For Print Only (No Overlay)** for the defined area to apply only to the print process. (**Important:** In this mode, the overlay is completely disabled so it will not be applied.) **Caution:** An overlay or an overlaminate must protect dye-sublimation printing or it will quickly begin to wear or fade.

Using the Overlay / Print Area (continued)



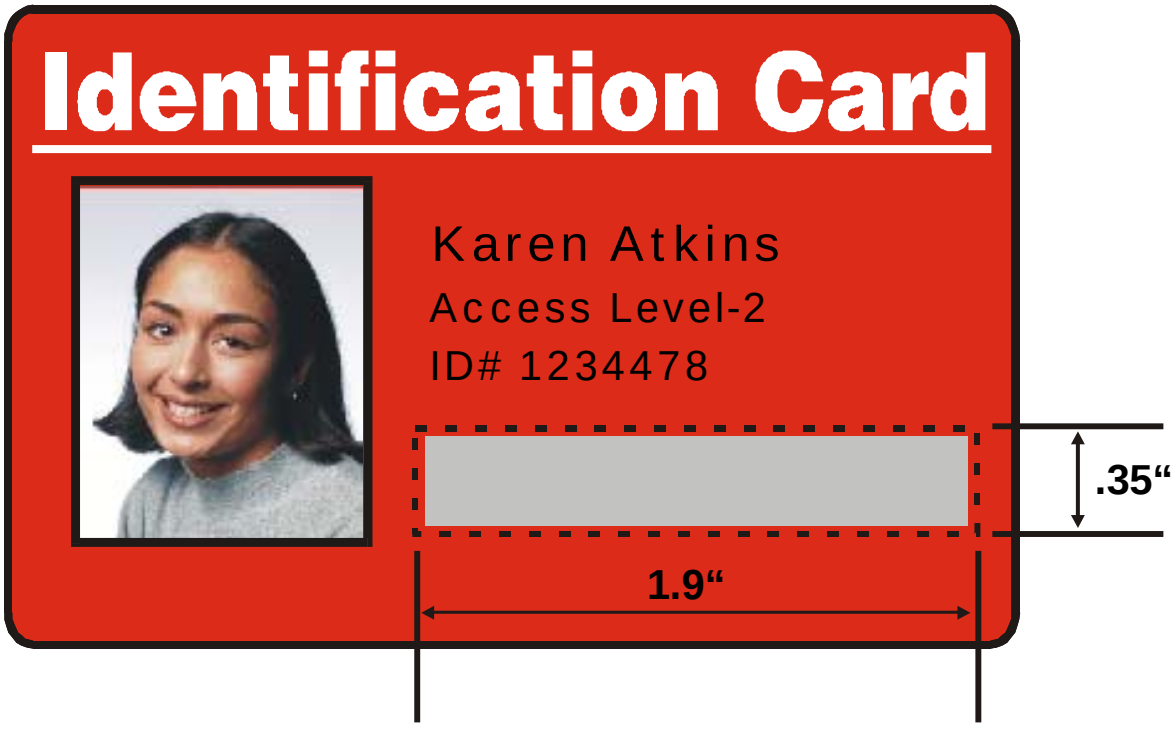
Using the Defined Area Option

Step	Procedure
1	a. Determine whether to use the Front option (via the **Front** radio button) or the Back option (via the **Back** radio button). b. Select the **Defined Area(s)** option to activate the card grid in the upper half of the window. It is through this card grid that up to five (5) Defined Areas can be assigned.



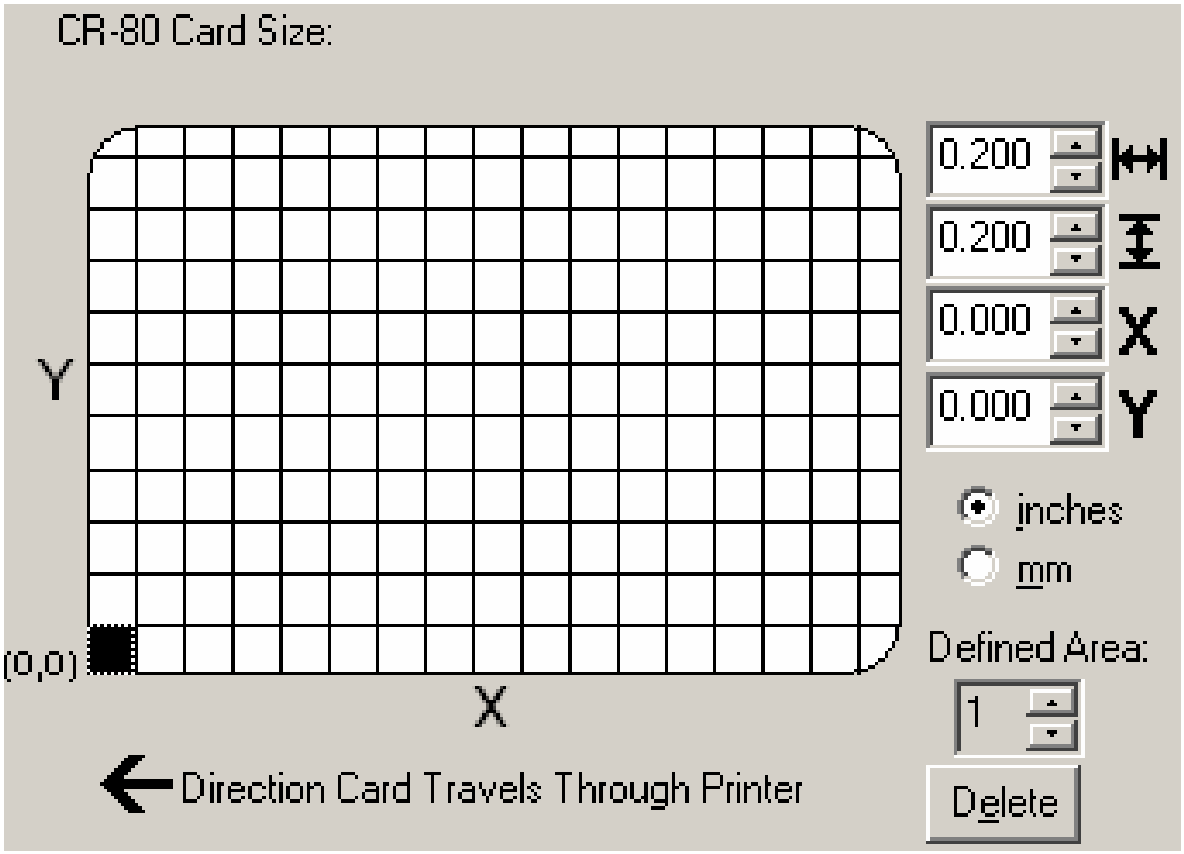
Using the Defined Area Option (continued)

Step	Procedure
2	When the card grid is first activated, a small black square will appear at its default size of .2" x .2" / 5mm x 5mm and at its default location in the lower left-hand corner (0, 0). This square represents the first defined area. • Determine the area of the card needed to define for a signature panel with a different size and location than the Driver's standard **Omit Signature Area** setting. (**Note:** This area is indicated by the dashed outline.) • Determine the area size by actually printing a card and looking at it in the same orientation as when it exits the Printer.
3	Measure the total size of the desired area and enter those dimensions into the dimension boxes. (**Note:** The minimum size an area is .2" x .2" / 5mm x 5mm.)



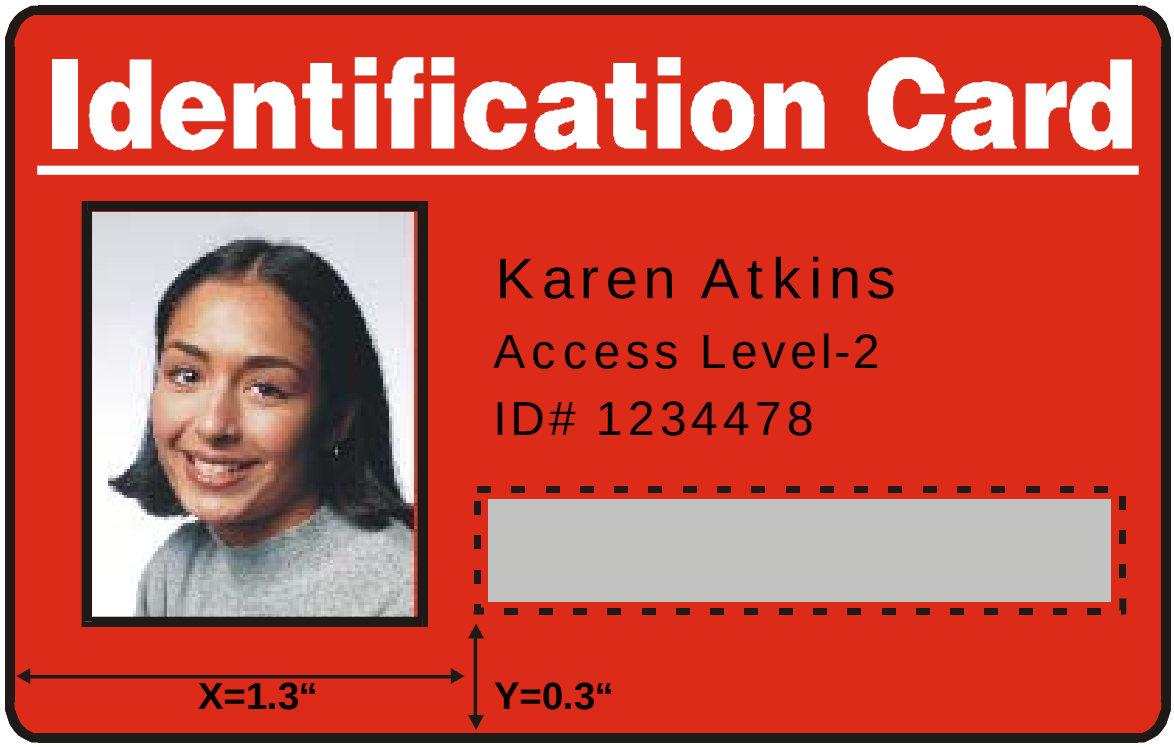
Using the Defined Area Option (continued)

Step	Procedure
4	Measure from the lower left corner of the card up and over to the lower left corner of for the defined area to begin and enter these values into the X and Y boxes. (**Note:** The card grid lines are spaced at .2 inch / 5mm intervals.)



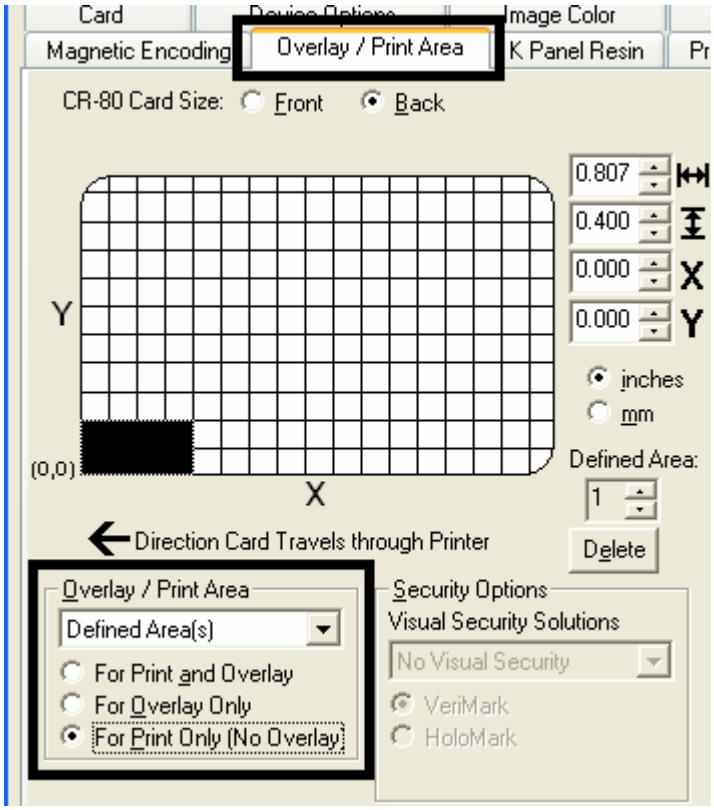
Using the Defined Area Option (continued)

Step	Procedure
5	a. Print the card design and observe how the image is oriented on the card as it ejects from the Printer. (**Note:** The location of a defined area is based on the card orientation as it exits the Printer.) b. Measure the defined area location based on the printed card. (**Note:** If selecting the **Rotate Front 180 Degrees** option, the image will appear upside down as it exits the Printer.) c. Position the defined area opposite to the measurement of the onscreen card design (which will appear right side up).



Using the Defined Area Option (continued)

Step	Procedure
6	a. Determine whether to use the Front option (via the **Front** radio button) or the Back option (via the **Back** radio button). b. Use the Defined Area arrows to navigate back and forth from area to area in the Front or Back area. (**Note:** The active area will always be highlighted with a dotted outline.) c. Define another area by clicking on the Defined Area UP arrow. • Another .2" x .2" / 5mm x 5mm area will appear in the lower left-hand corner. (**Note:** This is the location in which all newly defined areas will first appear.) • Up to 5 areas can be defined; however, additional areas cannot be added until the most recently created area has been moved or sized. (**Note:** For this reason, size and position each area as it is created.) d. Delete an area by using the Defined Area arrows to select the area and click **Delete**. (**Note:** If all areas are deleted, the K Panel Resin options will automatically be deselected.)

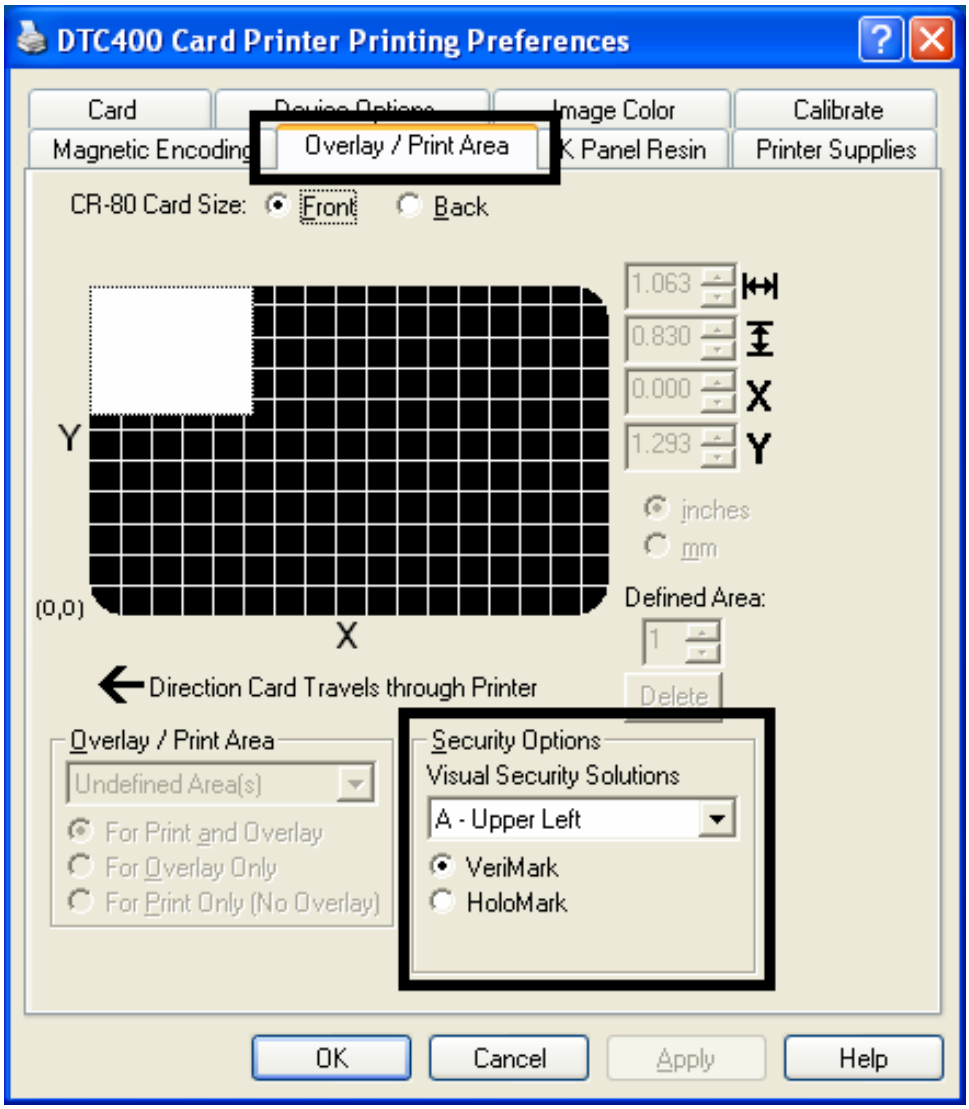


Using Security Options (Visual Security Solutions) (Front option only)

The Visual Security Solutions dropdown menu list will be used to enable and select which type of visual security will be used. The Visual Security dropdown list will be selectable only on the Front side (see below). Visual Security is not an option for the back side.

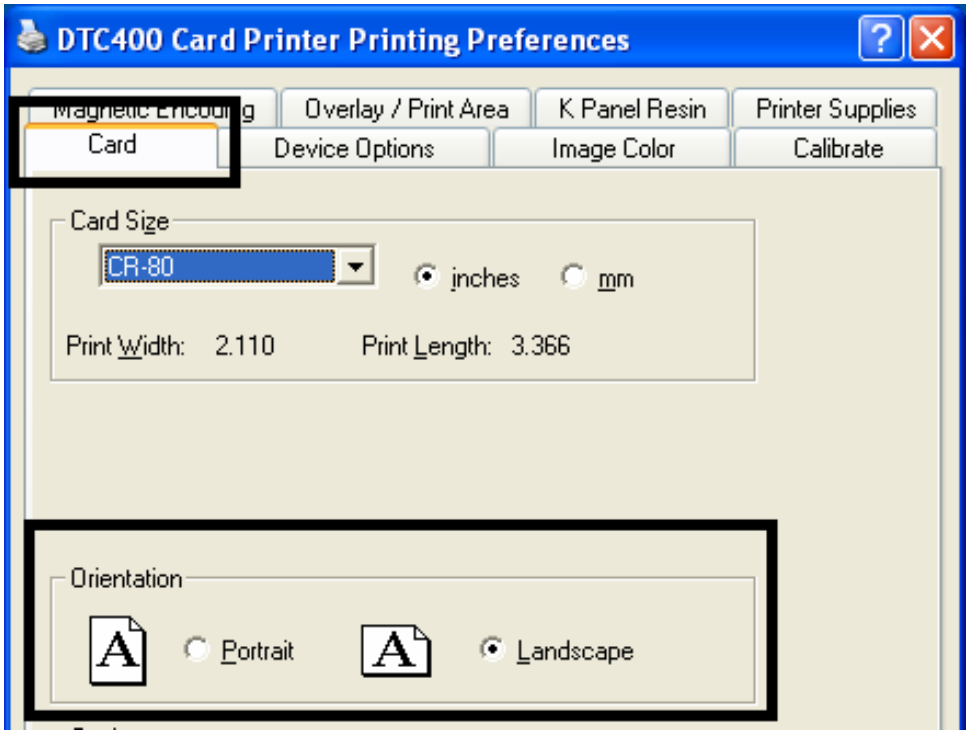
The following actions will occur when one of the Visual Security locations is selected.

- The Overlay / Print Area will be disabled.
- The Security Options become selectable.



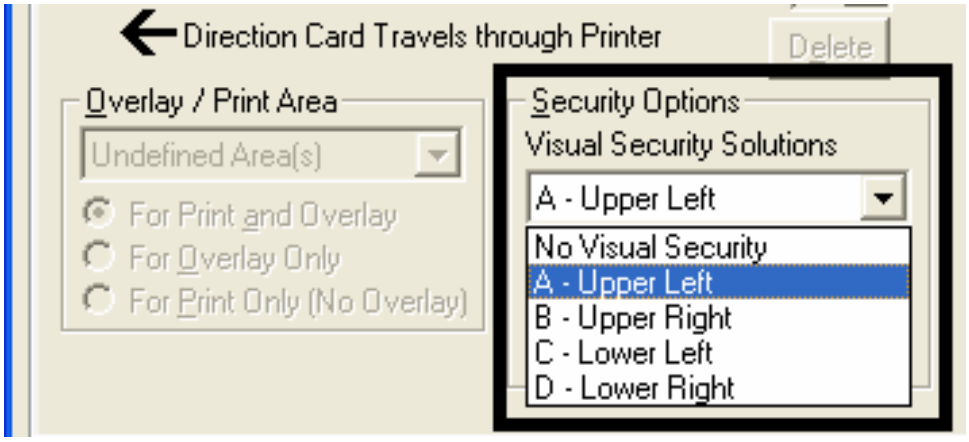
Selecting Orientation - Landscape under Card tab

Step	Procedure
1	Select **Landscape** (below) under Orientation under the Card Size tab to use the Visual Security Solutions (A to D), as shown in this window.



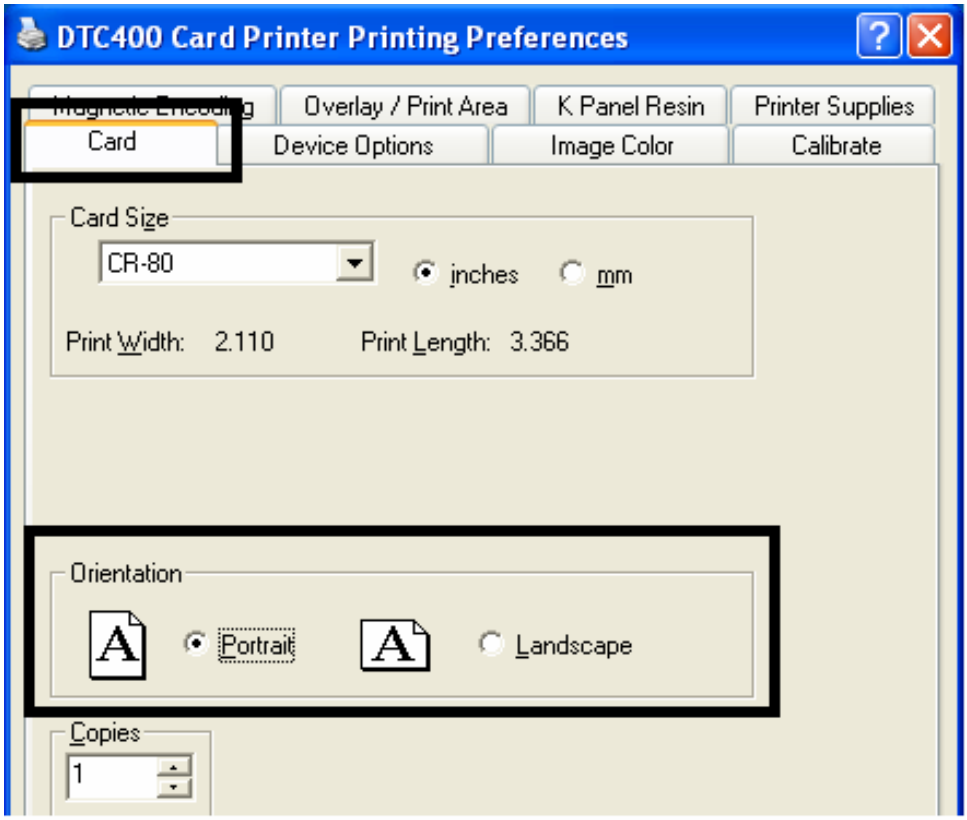
Selecting the Visual Security Solutions dropdown menu (A to D)

Step	Procedure
1	Click the Visual Security Solutions dropdown menu (below) under the Landscape - Orientation (see above) to use the options shown in this display.



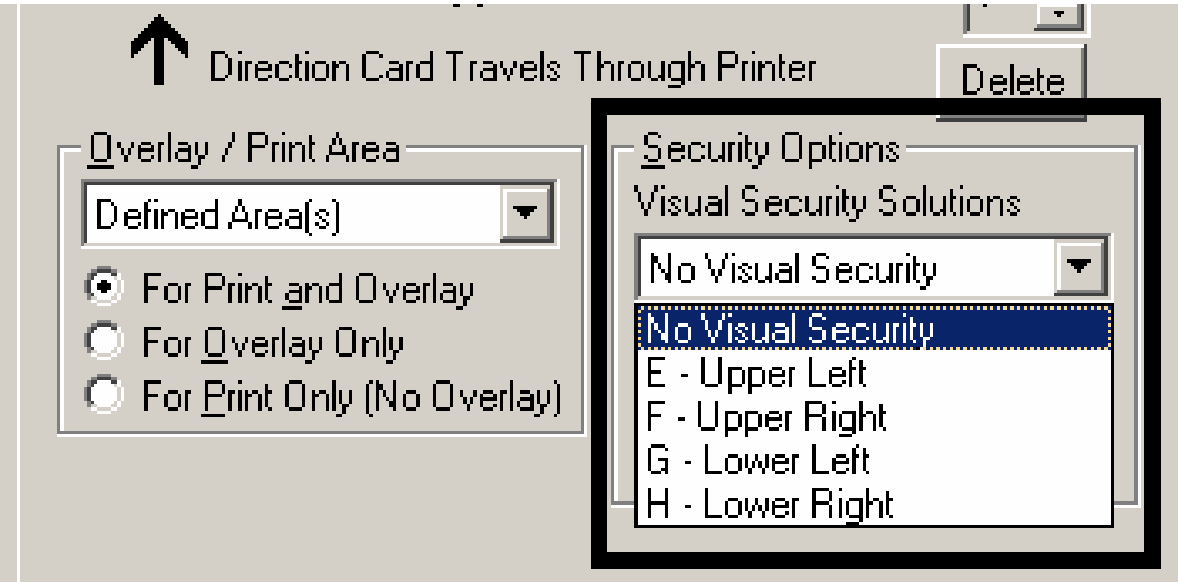
Selecting Orientation - Portrait under Card tab

Step	Procedure
1	Select **Portrait** on the Card Size tab to use the Visual Security Solutions (E to H), as shown in this window.



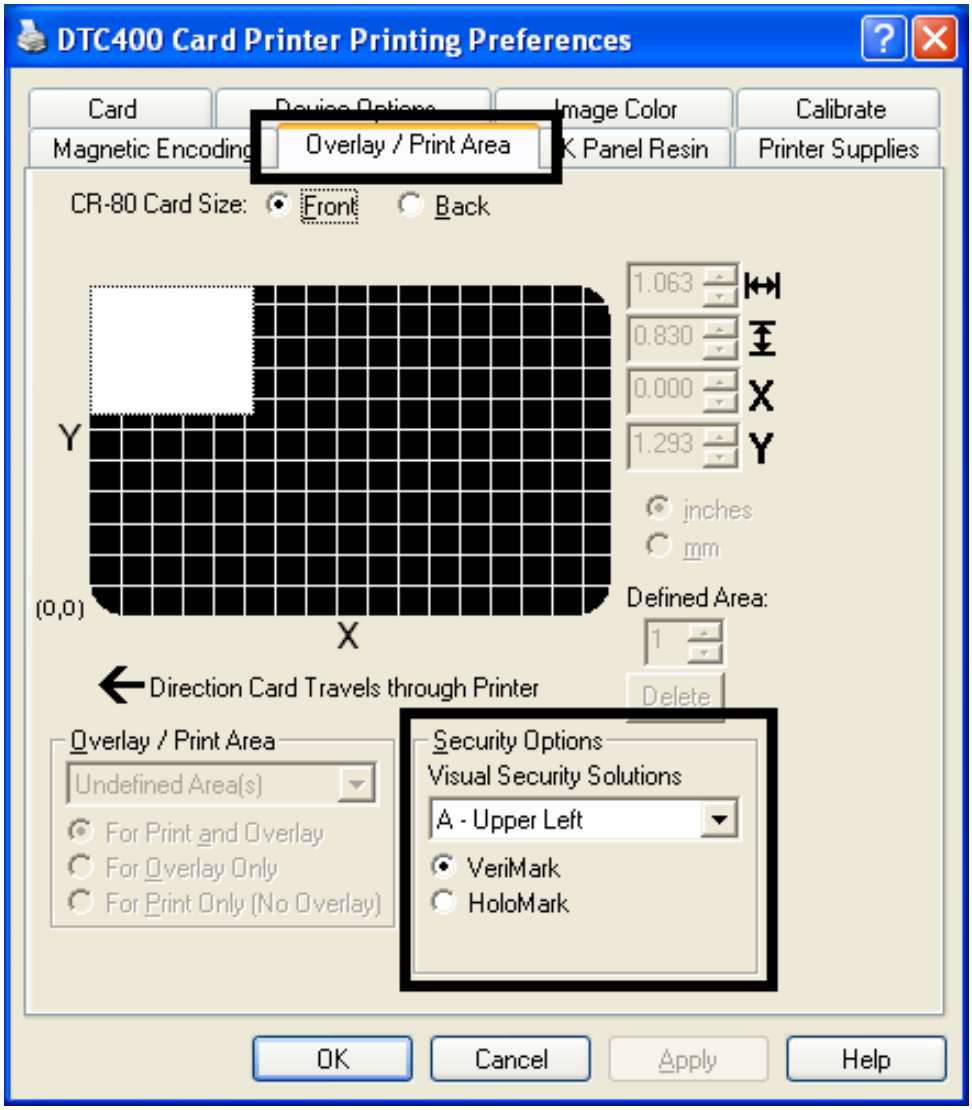
Selecting the Visual Security Solutions dropdown menu (E to H)

Step	Procedure
1	Click the Visual Security Solutions dropdown menu under the Portrait - Orientation (see above) to use the options shown below.



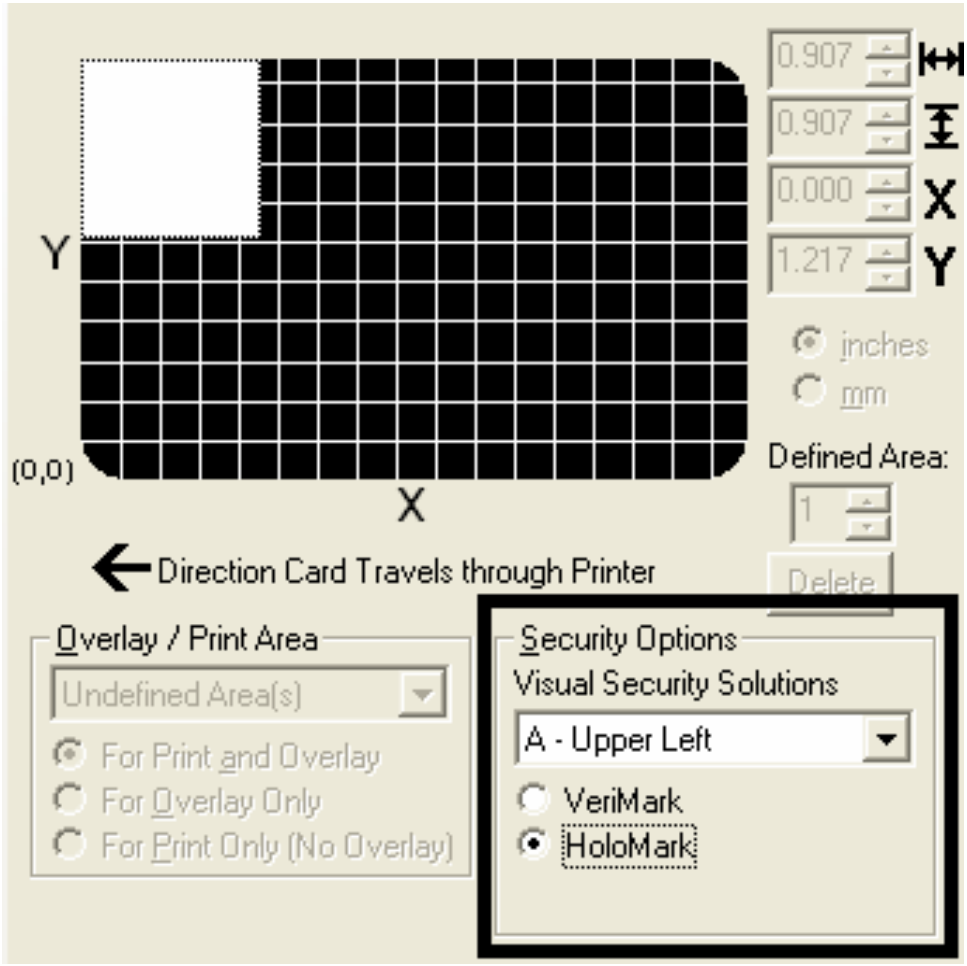
Selecting the VeriMark radio button (Frontside option only)

Step	Procedure
1	Click either **VeriMark** or **HoloMark**, as shown below. The foil options are used to control the size of the exclusion area. (**Note:** When VeriMark is selected a rectangle-sized area is excluded, HoloMark uses a square sized area.)
2	Click **VeriMark** (below) for the rectangle-sized area.



Selecting HoloMark (Front option only)

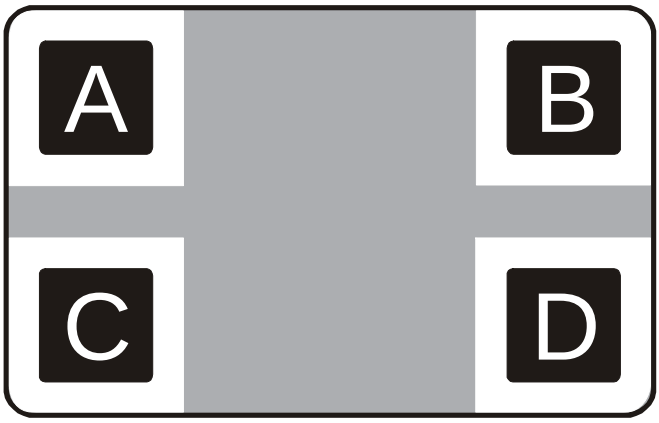
Step	Procedure
1	Click **HoloMark** (below) for the squared-area size.



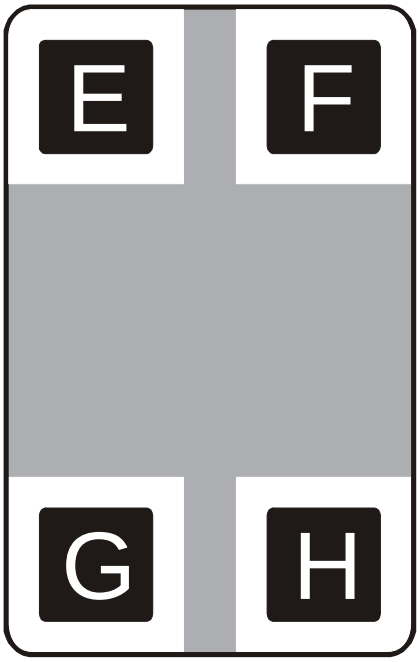
Reviewing the Custom VeriMark Card (Custom Graphic in a 2D foil)

The custom VeriMark image is stamped on blank, standard-sized cards. You can select one of eight positions (A to H), as shown in the Portrait and Landscape samples below.

Sample 1: VeriMark Card (Landscape - Orientation) - 4 positions (below)



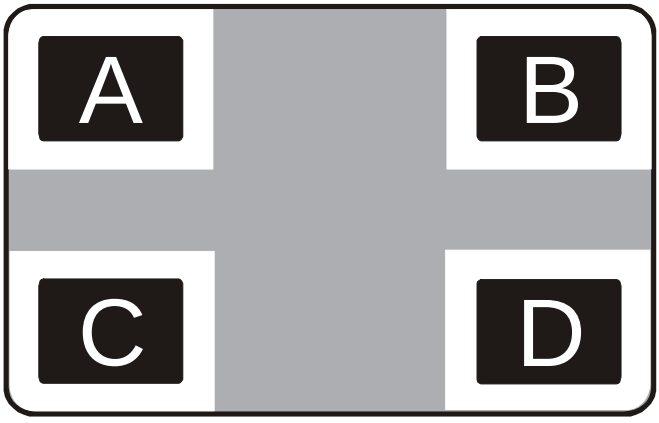
Sample 2: VeriMark Card (Portrait - Orientation) - 4 positions (below)



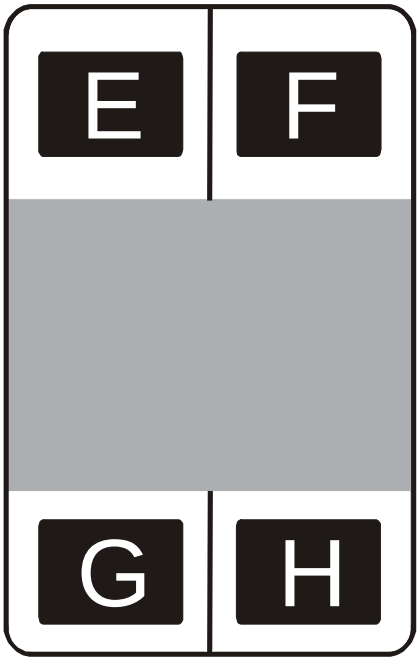
Reviewing the Custom HoloMark Card (Custom Graphic in a 2D foil)

The custom HoloMark image is stamped on blank, standard-sized cards. You can select one of eight positions (A to H), as shown in the Portrait and Landscape samples below.

Sample 1: HoloMark Card (Landscape - Orientation) - 4 positions (below)



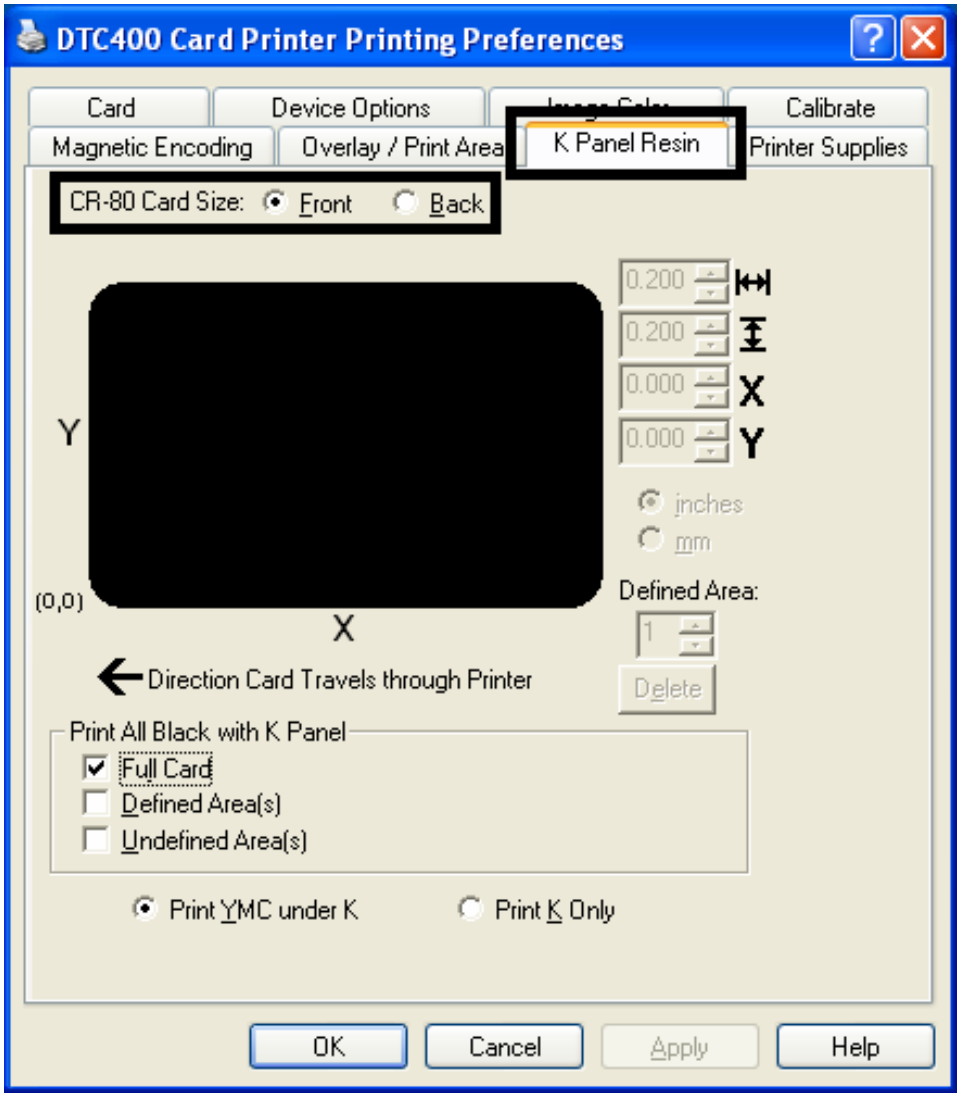
Sample 2: HoloMark Card (Portrait - Orientation) - 4 positions (below)



Using the K Panel Resin tab

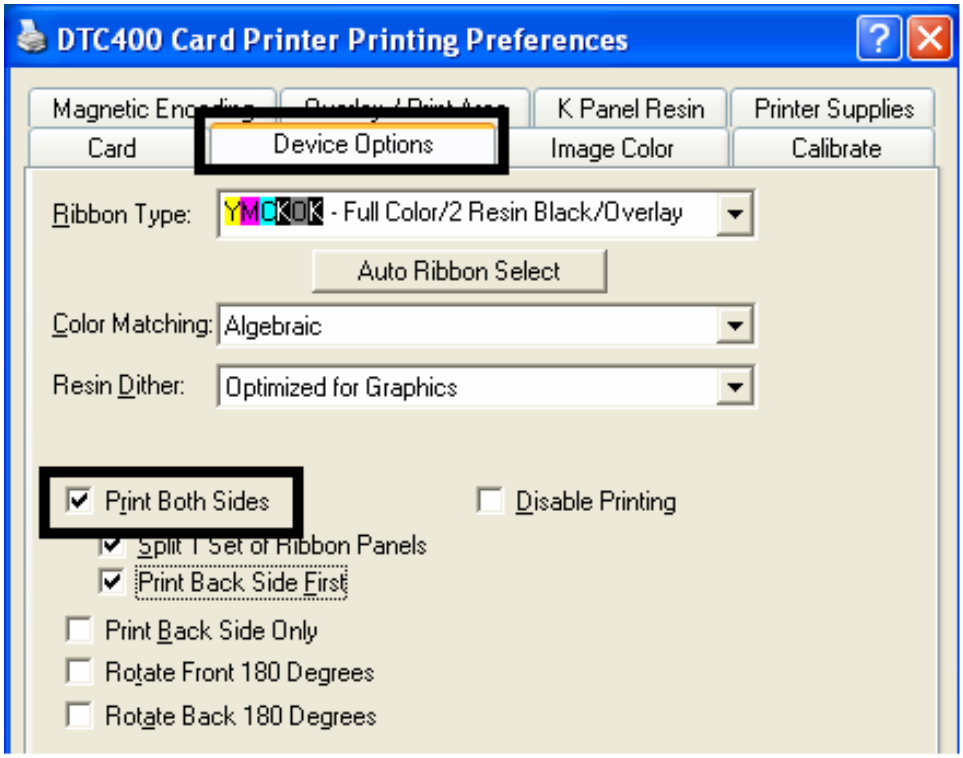
Select the **K Panel Resin** option to control where the resin black (K) panel of a full-color Ribbon is printed.

- If printing with a resin-only Ribbon type all K Panel Resin options will be grayed out.
- Resin black text is desirable due to its sharp, saturated black coloring and resin black bar codes are often required by Ultra Violet barcode readers to ensure readability when scanned.)



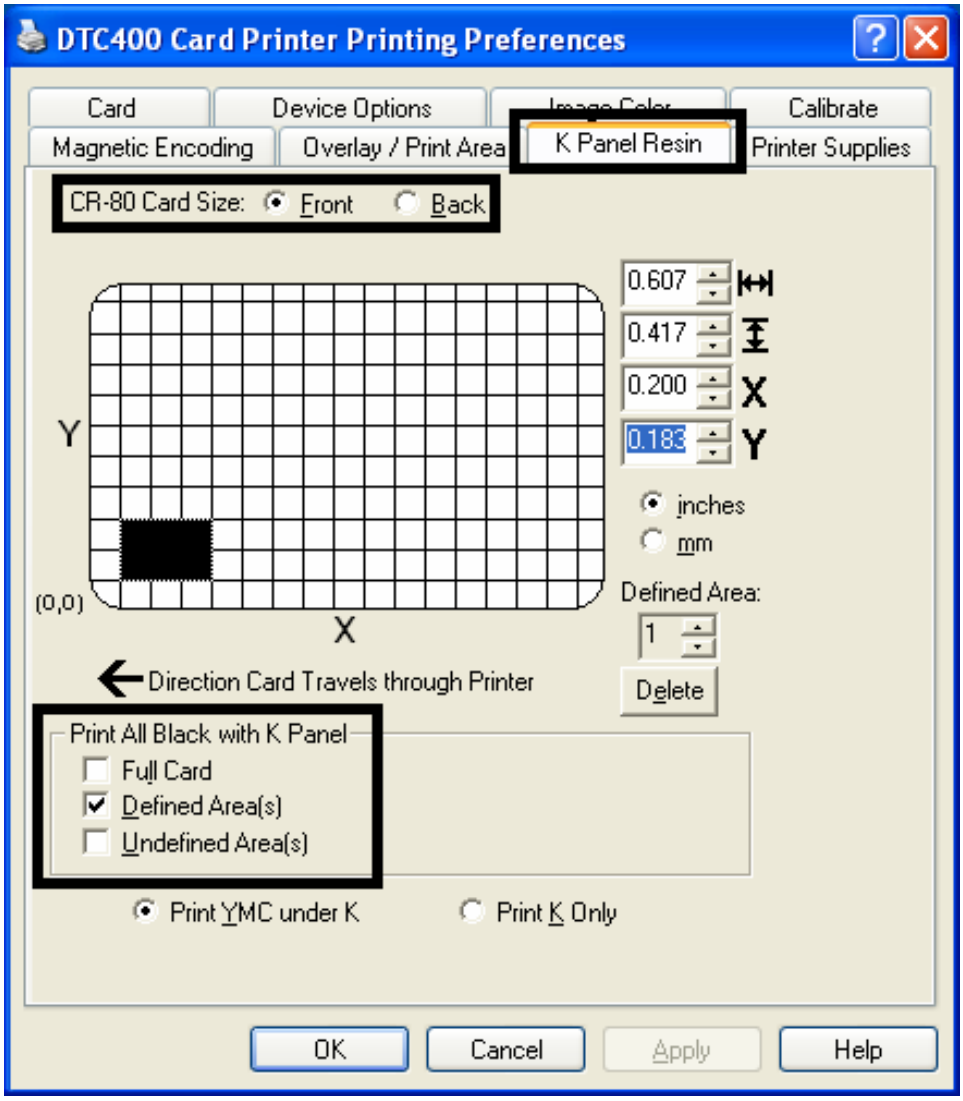
Enabling the Frontside and Backside options

Step	Procedure
1	Select Print Both Sides under the Device Options tab to enable the Backside option under the K Panel Resin tab. (**Note:** This same selection applies to the K Panel Resin backside option.)



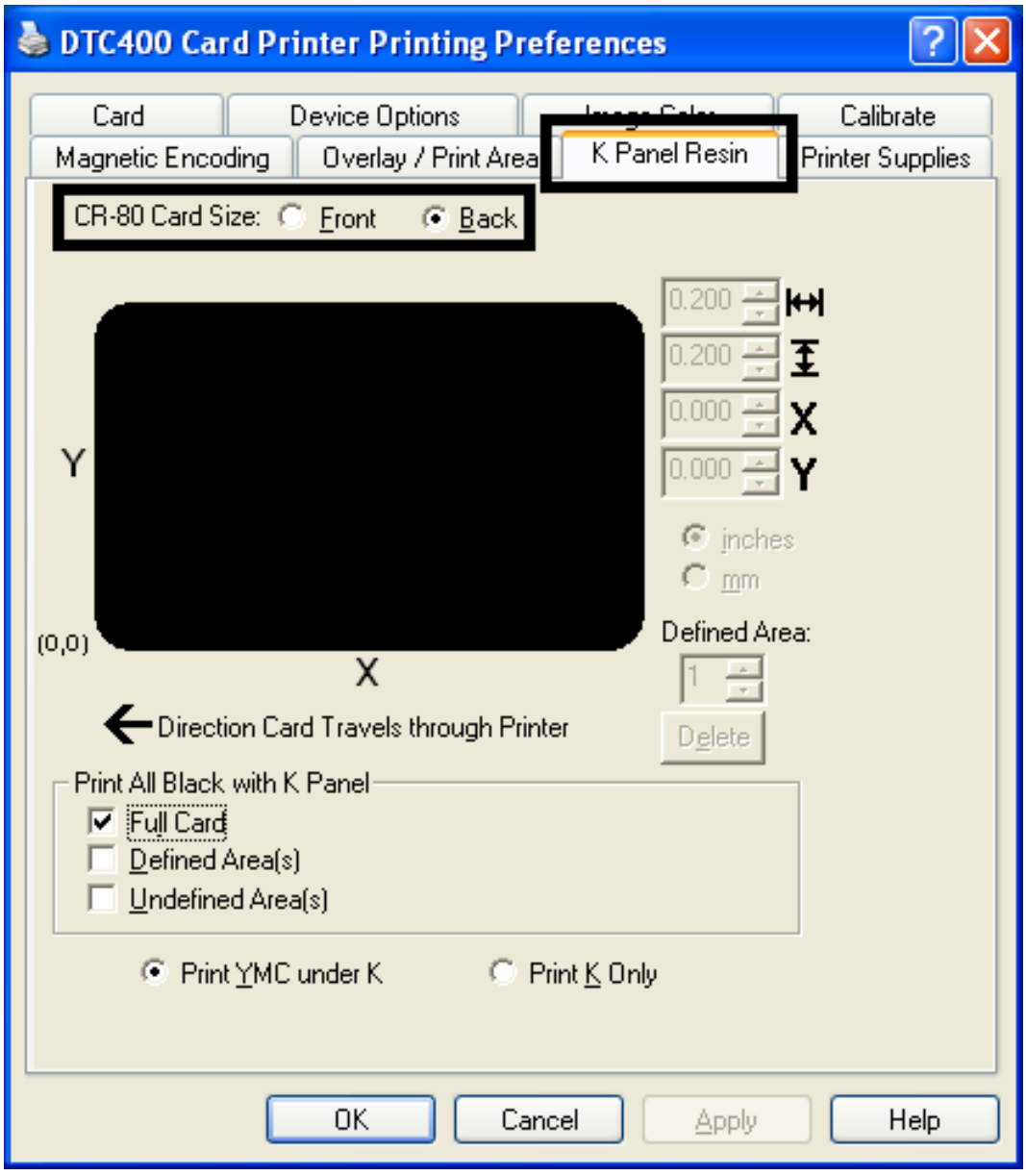
Enabling the Frontside option (K Panel Resin)

Step	Procedure
1	Select **Front** to view the K Panel options for the front of the card.



Enabling the Backside option (K Panel Resin)

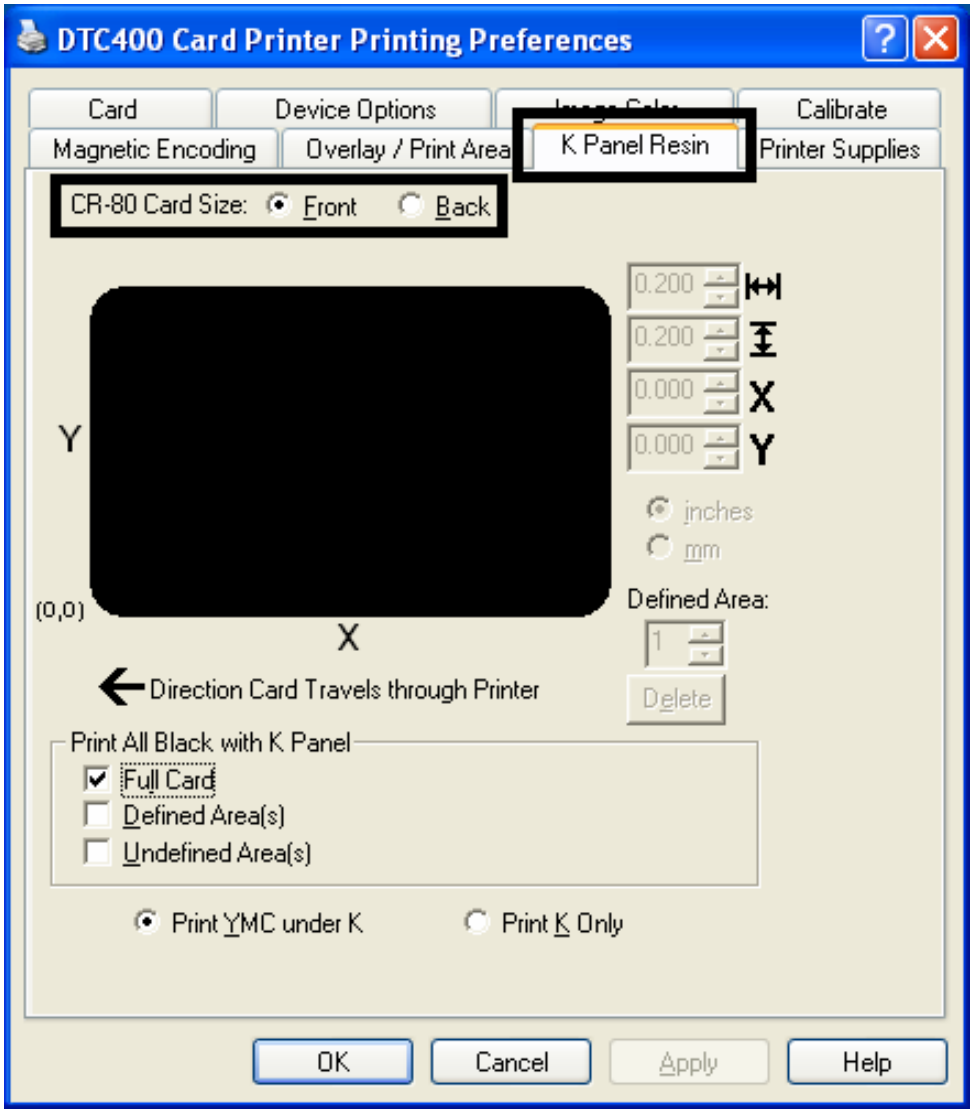
Step	Procedure
1	Select **Back** to view the K Panel Resin options for the back of the card.



Selecting from the Print All Black with K Panel options (Front and Back options)

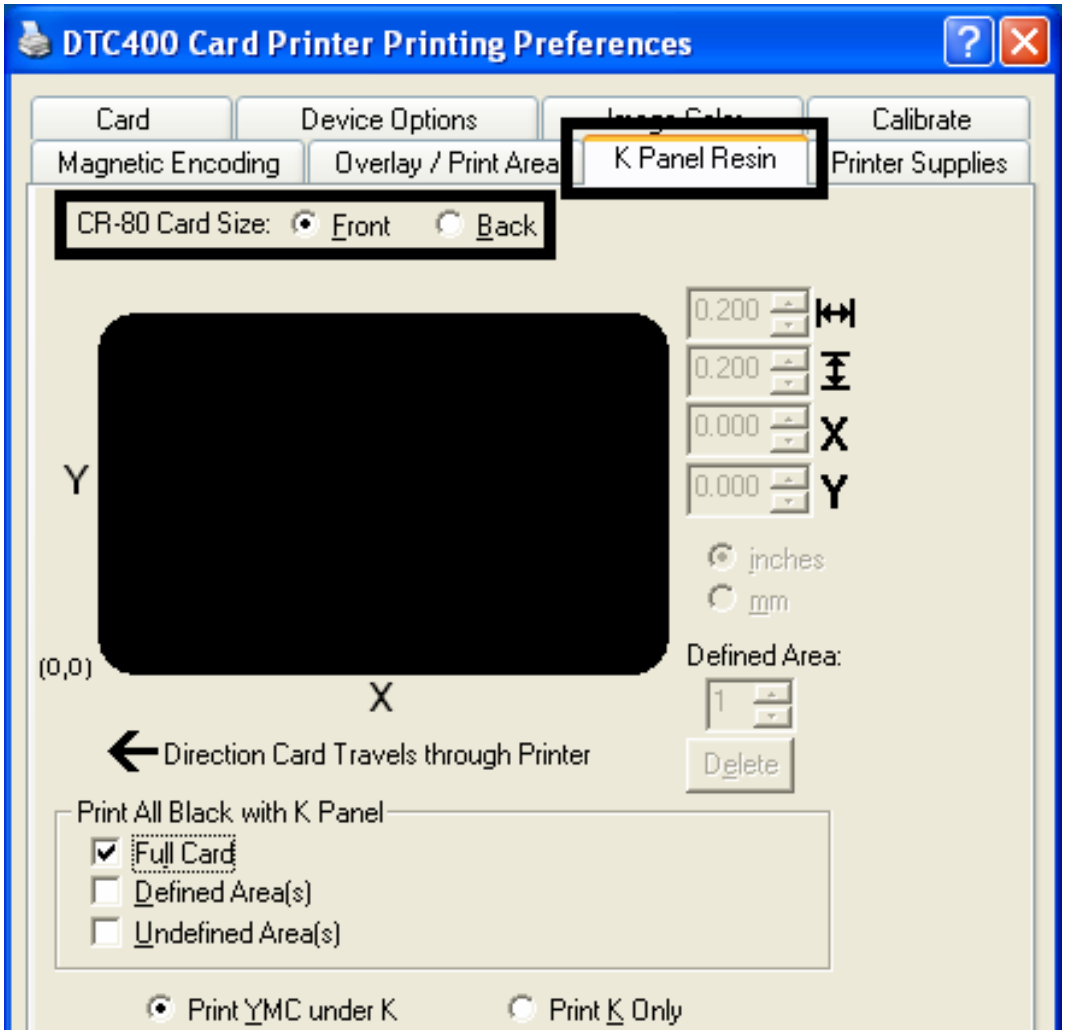
Select one of the three options listed under **Print All Black with K Panel** if the black text or bar codes are not TrueType fonts and/or are not printing with the resin black panel. (**Note:** The Printer Driver will print areas of the image where it finds black coloring with the Print Ribbon's resin black (K) panel as specified by each of the following options.

Step	Procedure
1	When none of the options within this window are selected, the Printer Driver will automatically print all TrueType black text and bar codes only with the Resin Black (K) Panel of the Print Ribbon.



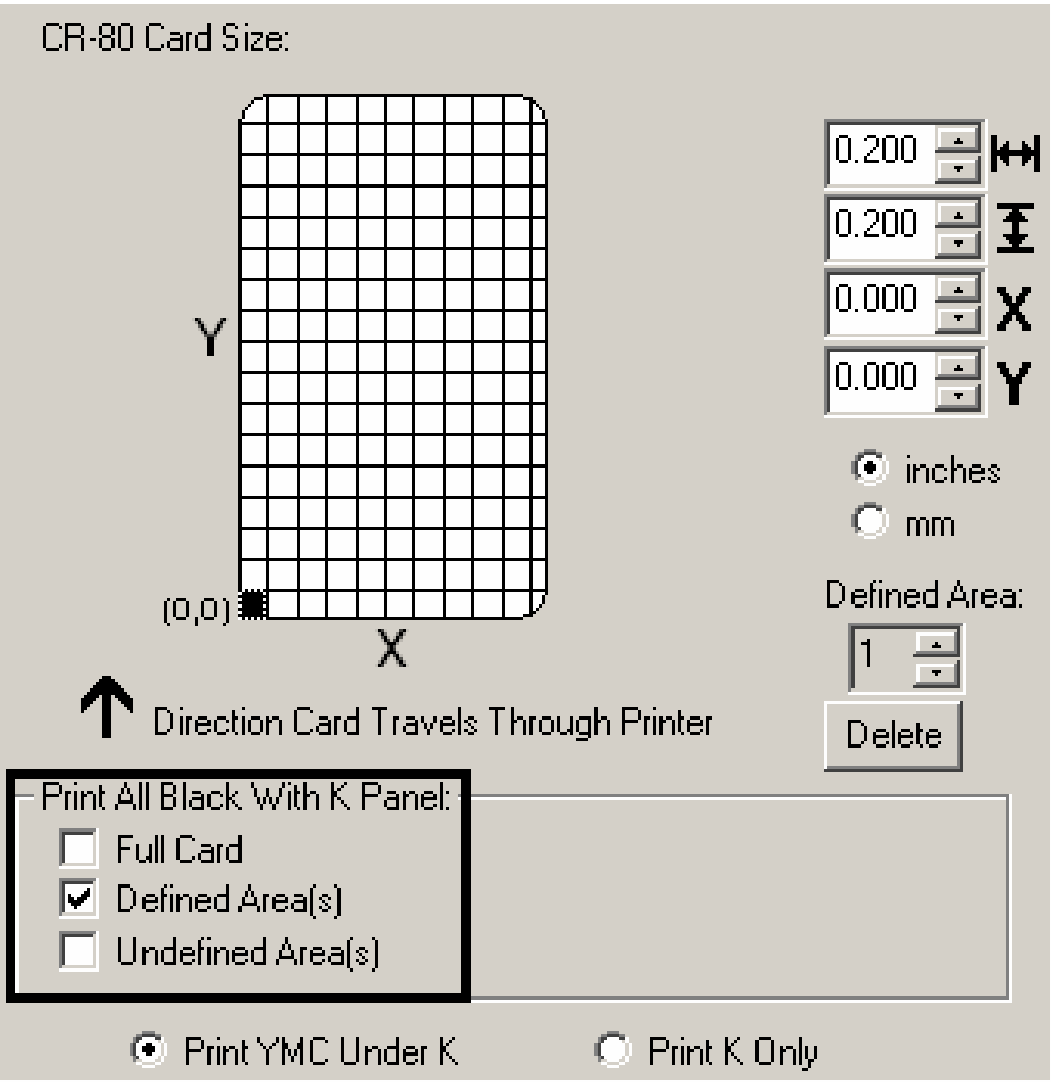
Selecting the Full Card option (Front and Back options)

Step	Procedure
1	Select **Full Card** for the Printer Driver to print the resin black (K) panel for all black found within all areas of the image.



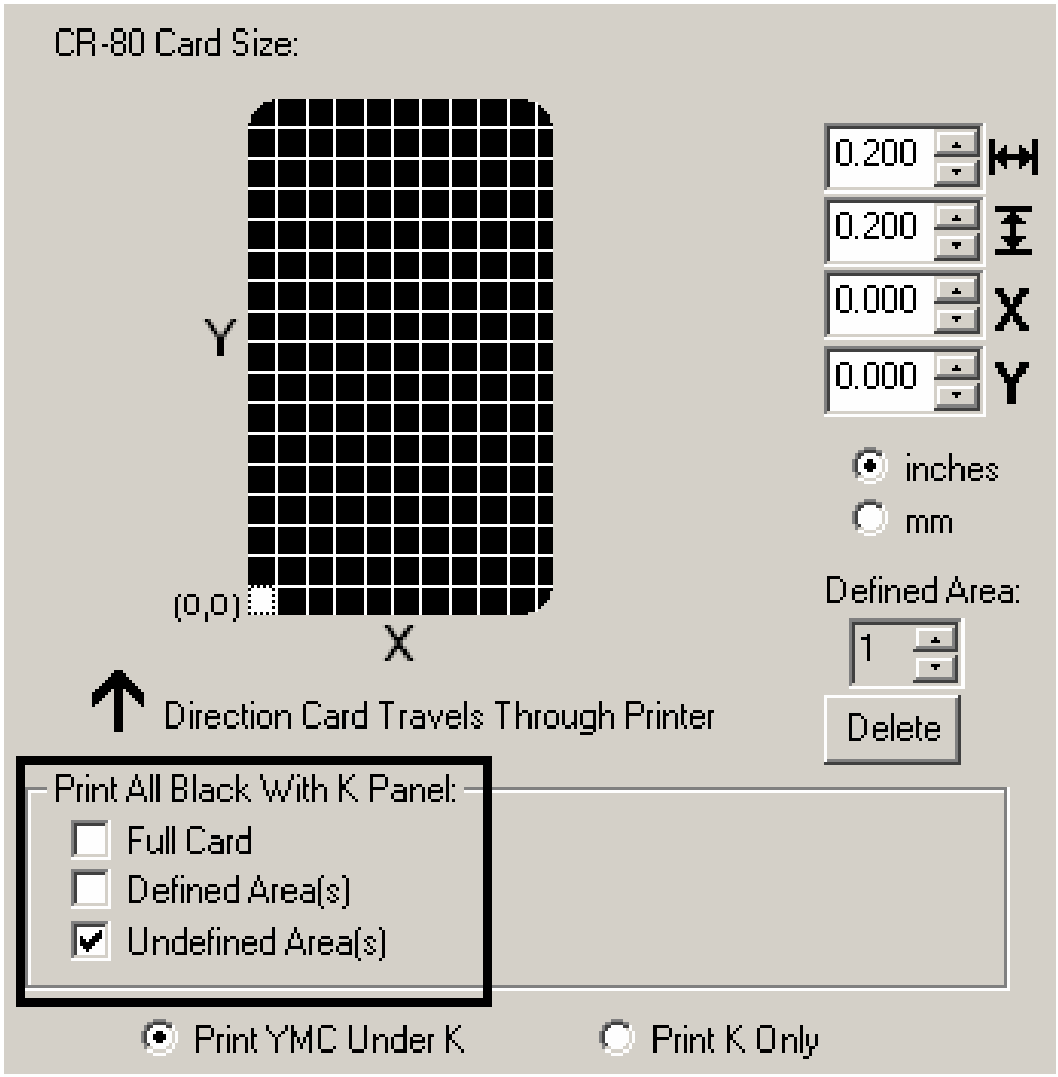
Selecting the Defined Area(s) option (Front and Back options)

Step	Procedure
1	Select **Defined Area(s)** for the Printer Driver to print the resin black (K) panel for all black found only in a desired and defined area or areas.



Selecting the Undefined Area(s) option (Front and Back options)

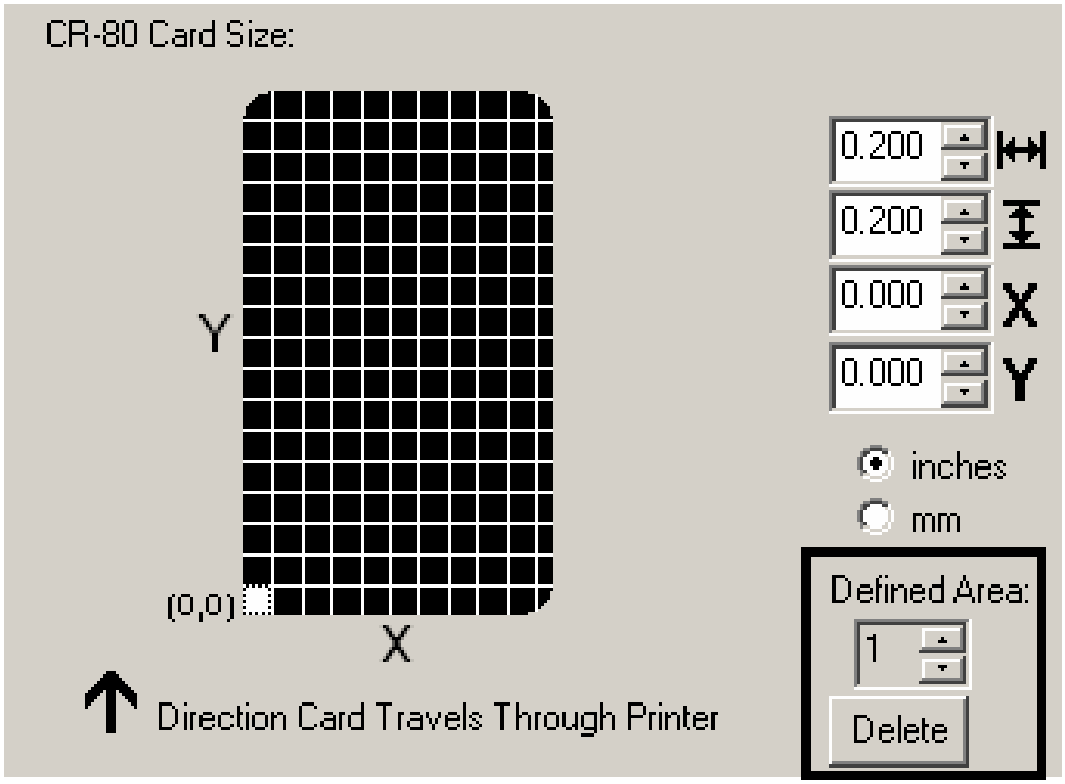
Step	Procedure
1	Select **Undefined Area(s)** for the Printer Driver to print the resin black (K) panel for all black found only in the space outside the defined areas. (**Note:** In the card grid, black indicates the area in which the resin black (K) panel will be printed.**)**



Selecting the Defined Area(s) function (Front and Back options)

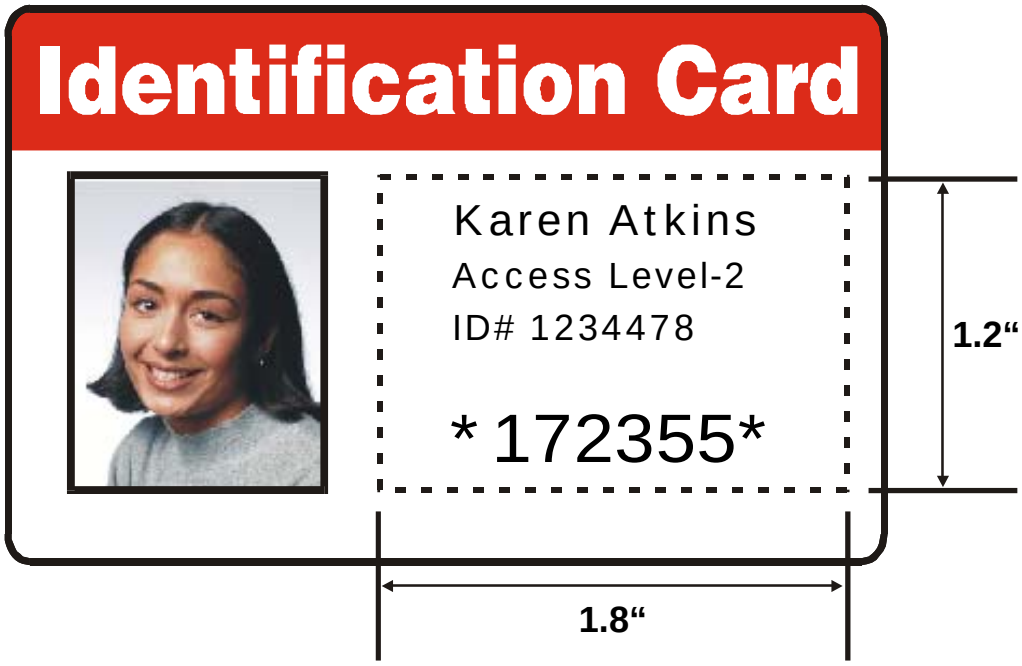
To define an area, refer to the following steps:

Step	Procedure
1	Click **Defined Area(s)**. (**Note:** This will activate the card grid in the upper half of the window. It is through this card grid that up to five areas can be defined.) When the card grid is first activated, a small square will appear at its default size of .2" x .2" / 5mm x 5mm and at its default location in the lower left-hand corner (0, 0). This square represents the first defined area. (**Note:** Changing the orientation of the card in the Card Tab will change the appearance of this Tab.)



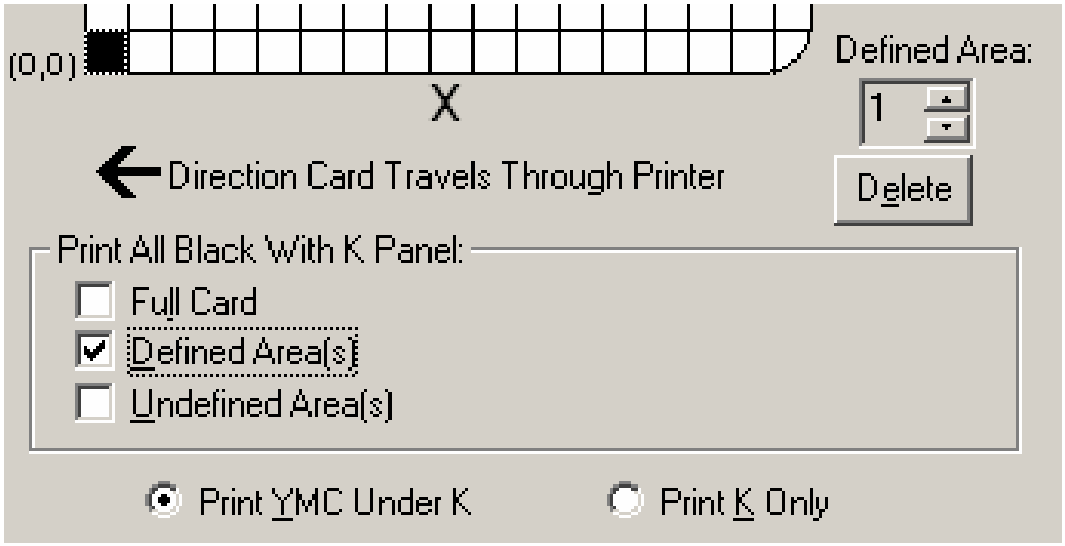
Selecting the Defined Area(s) function (continued)

Step	Procedure
2	a. Determine the area of the card necessary to define. In the sample (below), this area is indicated by the dashed outline. b. Determine the size of this area by actually printing a card and looking at it in the same orientation as when it exits the Printer.
3	Measure the total size for the area and enter those dimensions into the dimension boxes. (**Note:** The minimum size an area can be is .2" x .2" / 5mm x 5mm.)



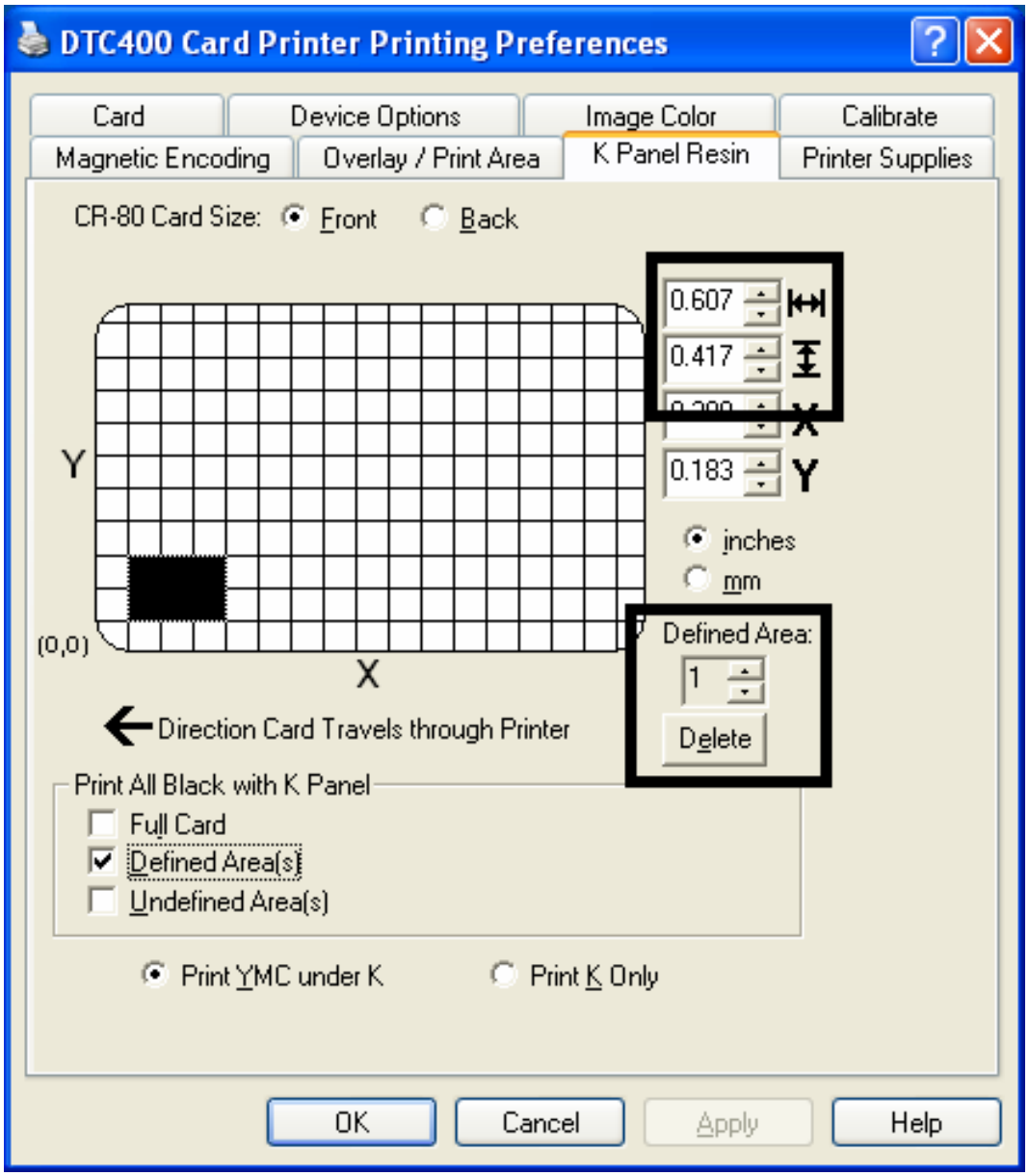
Selecting the Defined Area(s) function (continued)

Step	Procedure
4	a. Once the area is sized properly measure from the lower left corner of the card up and over to the lower left corner for the defined area to begin. b. Enter these values into the X and Y boxes. (**Note:** The card grid lines are spaced at .2 inch / 5mm intervals.)
5	a. Print the card design and note how the image is oriented on the card as it ejects from the Printer. (**Note:** The location of a defined area is based on the card orientation as it exits the Printer.) b. Measure the defined area location based on the printed card. (**Note:** If selecting **Rotate Front 180 Degrees**, the image will appear upside-down as it exits the Printer. In this case, position the defined area opposite to the measurement from the onscreen card design, which will appear right side up.)



Selecting the Defined Area(s) function (continued)

Refer to the previous procedure.

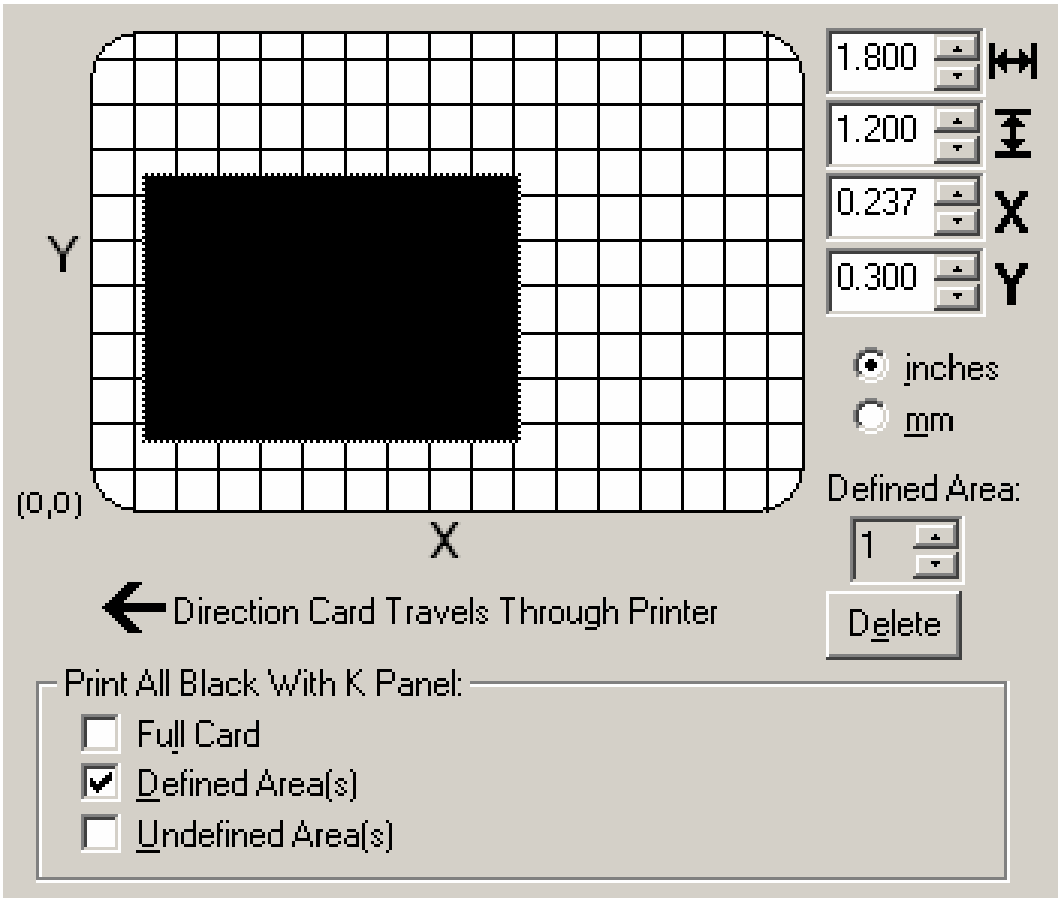


Selecting the Defined Area(s) function (continued)

Refer to the previous procedure.

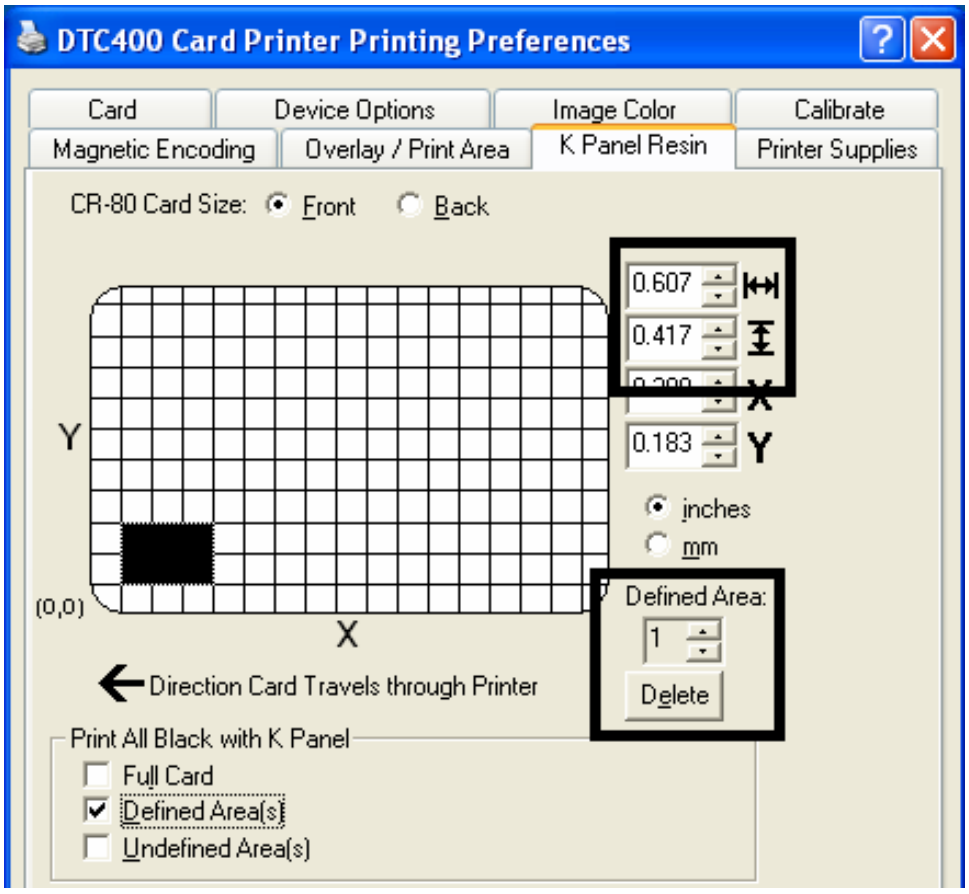
Selecting the Defined Area(s) function (continued)

Refer to the previous procedure.



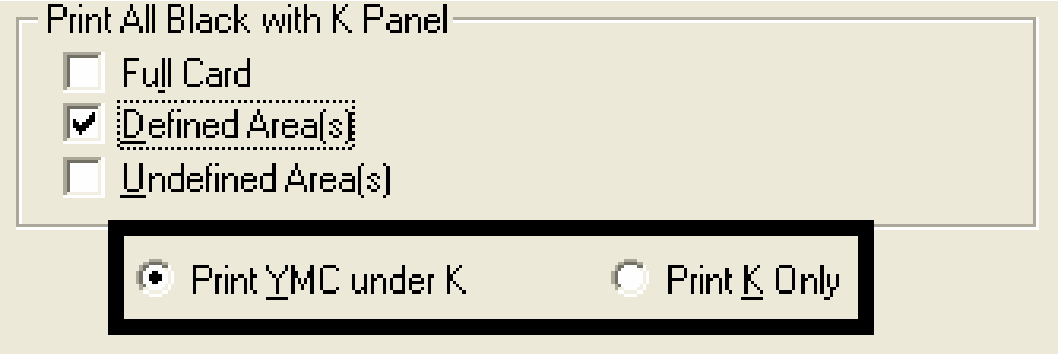
Selecting the Defined Area(s) function (continued)

Step	Procedure
6	Define another area by clicking the **Defined Area** up arrow. (**Note:** Another .2" x .2" / 5mm x 5mm area will appear in the lower left-hand corner. This is the location in which all newly defined areas will first appear.)
7	Use the **Defined Area** arrows to navigate back and forth from area to area. (**Note:** The active area will always be highlighted with a dotted outline. Up to 5 areas can be defined.) Size and position each area as it is created because additional areas cannot be added until the most recently created area has been moved or sized.
8	Delete an area by using the Defined Area arrows to select the area and clicking **Delete**. (**Note:** If all areas are deleted, the K Panel Resin options will automatically be deselected.)



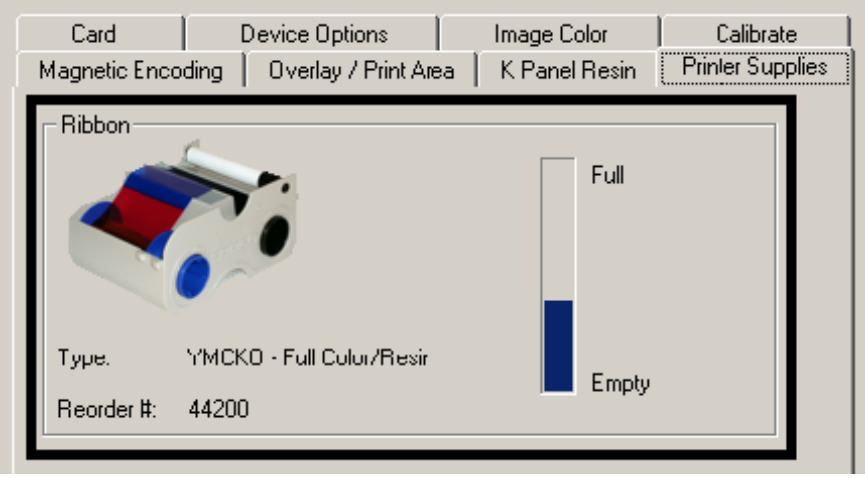
Selecting the Print YMC under K and Print K Only options

Step	Procedure
1	• Select between the **Print YMC Under K** and **Print K Only** options. (**Note:** When the **Print YMC Under K** option is selected, all black in the designated areas will print with the Yellow (Y), Magenta (M) and Cyan (C) Ribbon panels directly beneath the resin black (K) panel.) **OR** • Select this option if printing resin black text or bar codes onto a colored background to provide a more gradual transition between the two.
2	Select **Print K Only** if printing resin black onto a white background to maximize the sharpness of printed text and bar codes. (**Note:** When this option is selected, all black in the designated areas will print only with the resin black (K) panel.)



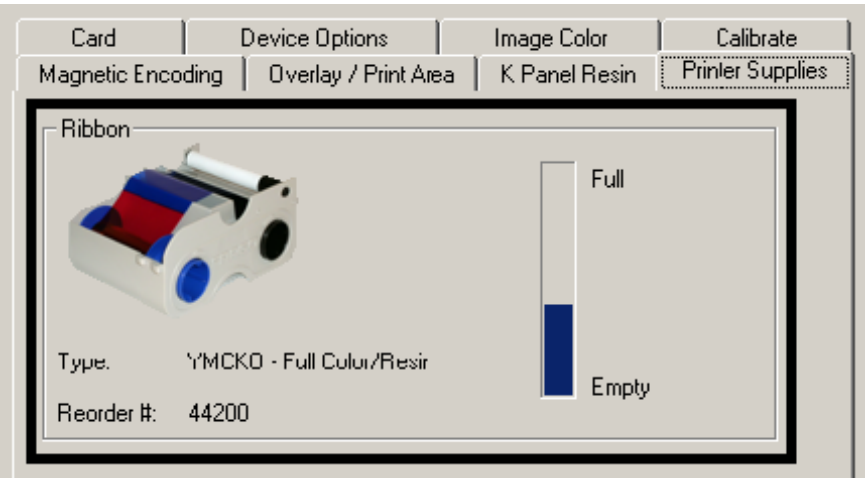
Using the Printer Supplies tab (DTC400)

Use the options on this tab to view information about the Ribbon installed in the Printer.



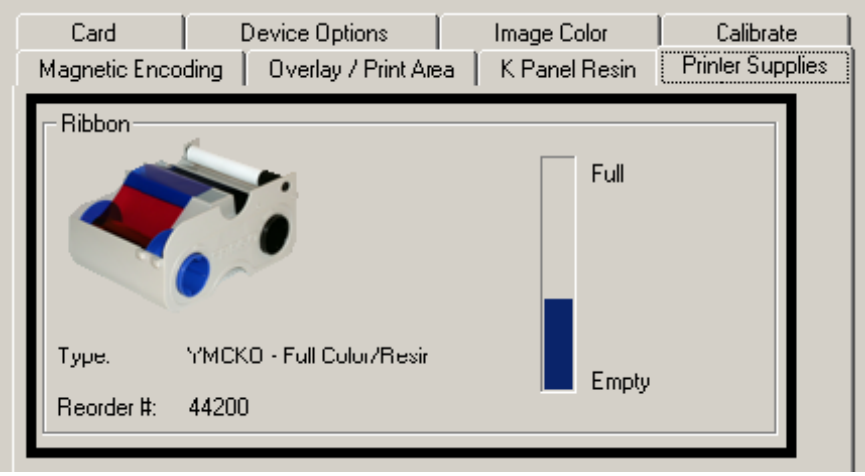
Reviewing the Ribbon Information

Step	Procedure
1	Use the Ribbon information to determine which Ribbon is being used to print with and its part number.



Reviewing the Ribbon Level Indicator

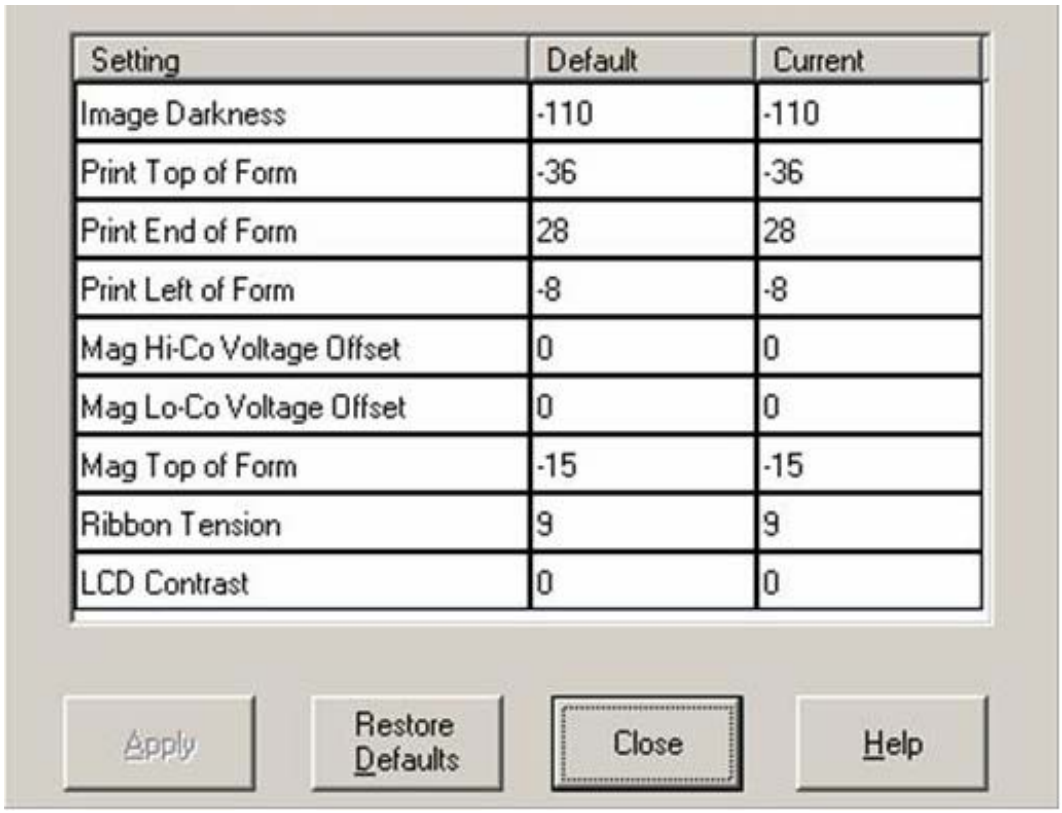
Step	Procedure
1	Use the Ribbon Level indicator to view approximately how much Ribbon is left.



Using the Printer Calibration Utility (DTC400)

Access the Settings dialog box via the **Settings** button on the Calibrate tab. Use the adjustment mode to change the Printer's internal settings. (**Note:** The Card Printer is equipped with an internal adjustment mode programmable through the Settings dialog box. This dialog box is accessible only if the Printer is powered ON, it is in Ready Mode and it is properly connected to the PC.)

Caution! These settings are optimized at the factory. In most cases, these settings can be used without changing them.



Using the Image Darkness Option

Use this option to set the overall darkness of the printed image by increasing or decreasing the amount of heat used by the Printhead when printing.

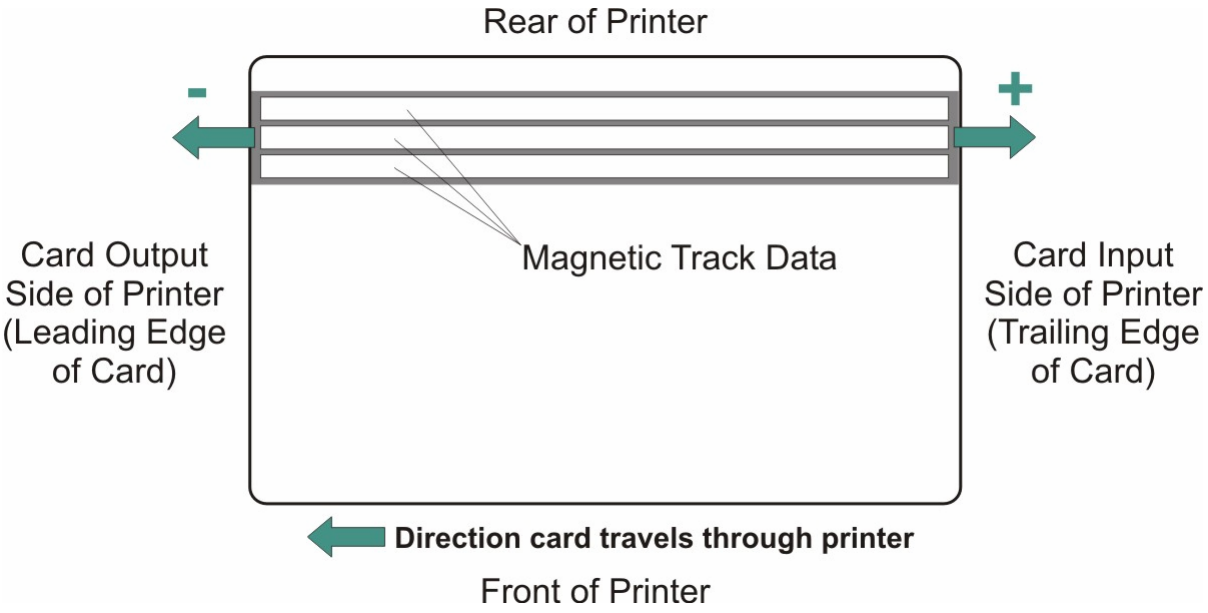
Step	Procedure
1	Lighten the printed image by clicking the down arrow ▼ to enter a negative value and decrease the amount of Printhead heat. **OR** Darken the image by clicking the up arrow ▲ to enter a positive value and increase the amount of Printhead heat. **Caution:** If the value is set too high, the Ribbon may jam or even break.

Using the Print Top of Form Option

Use this option to adjust the lengthwise or horizontal position of the printed image on a card so it appears centered. (**Note:** When adjusting this value, keep in mind that cards always remain in the same landscape orientation while moving through the Printer.)

The diagram (below) represents how the printed image will move in relation to the fixed card position as a positive or negative Image Placement value is entered.

Step	Procedure
1	Enter a negative value to move the printed image toward the leading edge of the card, or the card output to the side of the Printer. **OR** Enter a positive value to move the printed image toward the trailing edge of the card, or the card input to the side of the Printer. • **Maximum Adjustment Range:** The maximum adjustment range is ±127. As a rule, 20 equals about .030"/. 8mm. (**Note:** This is about the same as the thickness of a standard CR-80 size card.) **Caution:** If the negative value is set too high, the Print Ribbon may break.

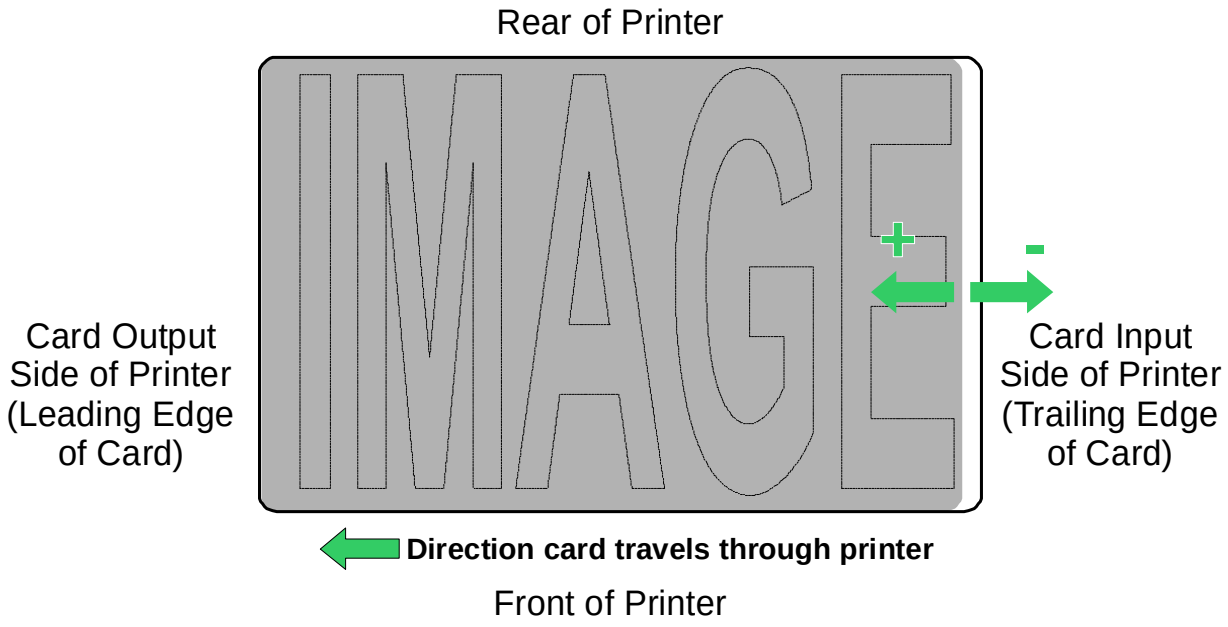

Rear of Printer
-
+
Card Output Side of Printer (Leading Edge of Card)
Magnetic Track Data
Card Input Side of Printer (Trailing Edge of Card)
Direction card travels through printer
Front of Printer

Using the Print End of Form Option

Use this option to reduce or increase the overall printable area in order to optimize edge-to-edge printing toward the trailing edge of a card. (**Note:** When adjusting this value, keep in mind that cards always remain in the same position while moving through the Printer.)

The diagram (below) represents how the end of form will move in relation to the fixed card position as a positive or negative Print End of Form value is entered.

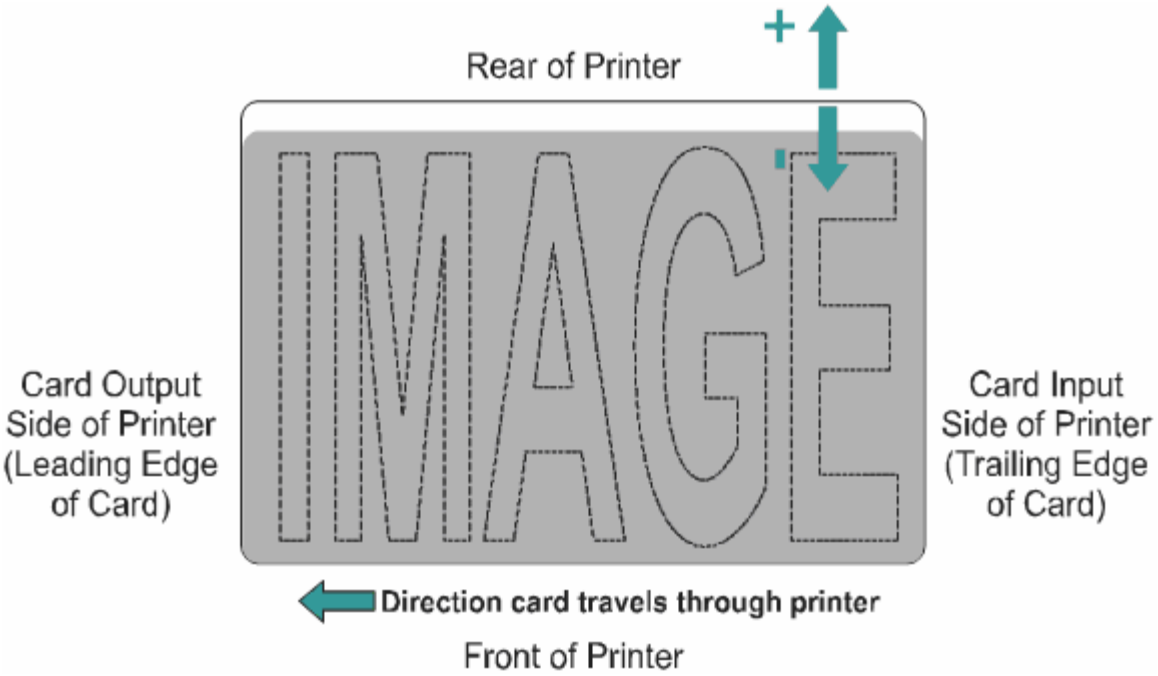
Step	Procedure
1	Enter a negative value to reduce the Print End of Form and move the end of the printable area more toward the leading edge of the card. **OR** Enter a positive value to increase the print length and move the end of the printable area more toward the trailing edge of the card. a. **Maximum Adjustment Range:** The maximum adjustment range is ±127. As a rule, 20 equals about .030"/. 8mm. (**Note:** This is about the same as the thickness of a standard CR-80 size card.)


Rear of Printer
IMAGE
+
-
Card Output Side of Printer (Leading Edge of Card)
Card Input Side of Printer (Trailing Edge of Card)
Direction card travels through printer
Front of Printer

Using the Print Left of Form Option

Use this option to adjust the vertical position of the printed image on a card so it appears centered. (**Note:** When adjusting this value, keep in mind that cards always remain in the same landscape orientation while moving through the Printer.)

Step	Procedure
1	Enter a negative value to move the image towards the bottom edge of the card (See image below), **OR** Enter a positive value to move the image towards the back top edge of the card (see image below). • **Maximum Adjustment Range:** The maximum adjustment range is ±127. As a rule, 10 equals about .030"/. 8mm. This is about the same as the thickness of a standard CR-80 size card.


+
Rear of Printer
IMAGE
Card Output Side of Printer (Leading Edge of Card)
Card Input Side of Printer (Trailing Edge of Card)
Direction card travels through printer
Front of Printer

Using the Magnetic Encoder Voltage Offset Option

Use this option to adjust the voltage of the Magnetic Encoder.

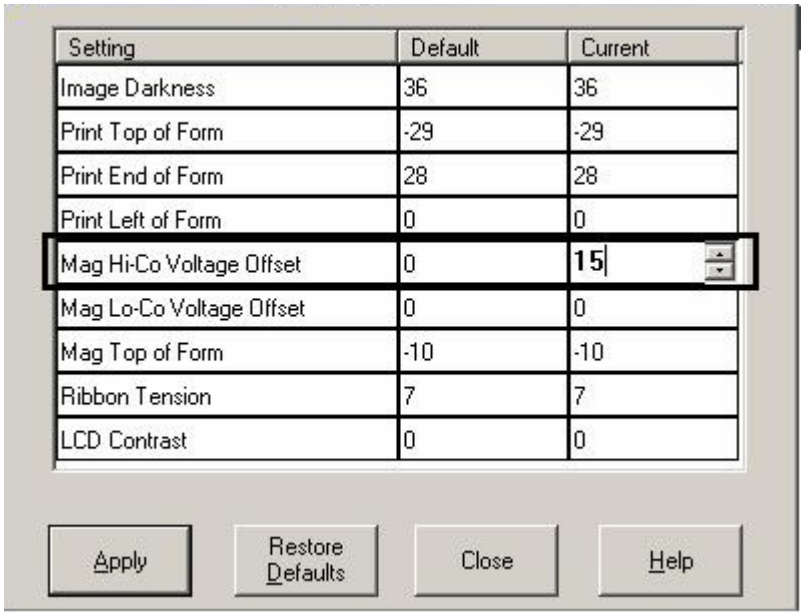
- Encoder voltage is set from the factory at a default of 7.24vdc for Hi-Co Magnetic cards and 2.54vdc for Lo-Co Magnetic cards.

- Depending on the cards that are being used, it may be necessary to adjust the encoder voltage out of default.

See the next two procedures for instructions on adjusting the Magnetic Encoder Voltage. (**Note:** The required encoder voltage for the cards will need to be known in order to properly set the Encoder Voltage Offset value. This information should be available through the card manufacturer or reseller).

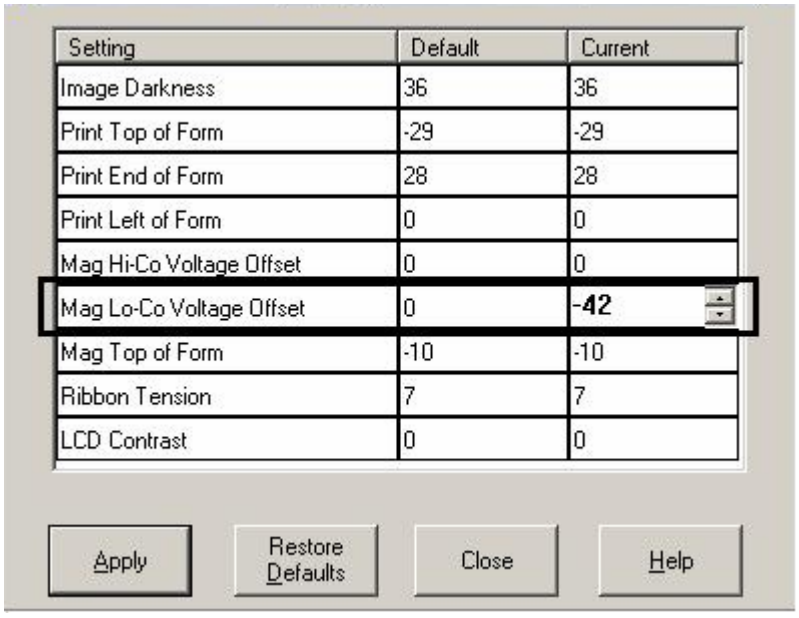
Adjusting the Hi-Co Voltage Offset

Step	Procedure
1	Identify the Magnetic Encoder voltage required by the cards. (**Note:** The required encoder voltage for the cards will need to be known in order to properly set the Encoder Voltage Offset value. This information should be available through the card manufacturer or reseller).
2	Use the following equation to identify the proper Mag Hi-Co Voltage Offset value • ((((36500/(((**<Desired Voltage>**+4.6)/1.23)-1))-2670)/39.0625) – 40)X-1 **For example:** Required Encoder Voltage = 9vdc • ((((36500/(((**9**+4.6)/1.23)-1))-2670)/39.0625) – 40)X-1 = **15**
3	Change the Mag Hi-Co Voltage Offset value. I.E **15**
4	Use the Diagnostic Utility to run a Magnetic Self test and verify encoded quality.



Adjusting the Lo-Co Voltage Offset

Step	Procedure
1	Identify the Magnetic Encoder voltage required by the cards. (**Note:** The required encoder voltage for the cards will need to be known in order to properly set the Encoder Voltage Offset value. This information should be available through the card manufacturer or reseller).
2	Use the following equation to identify the proper Mag Lo-Co Voltage Offset value • ((((36500/(((**<Desired Voltage>**+4.6)/1.23)-1))-2670)/39.0625) – 126)X-1 **For example:** Required Encoder Voltage = 1.5vdc • ((((36500/(((**1.5**+4.6)/1.23)-1))-2670)/39.0625) – 126)X-1 = **-42**
3	Change the Mag Lo-Co Voltage Offset value. I.E -**42**
4	Use the Diagnostic Utility to run a Magnetic Self test and verify encoded quality.



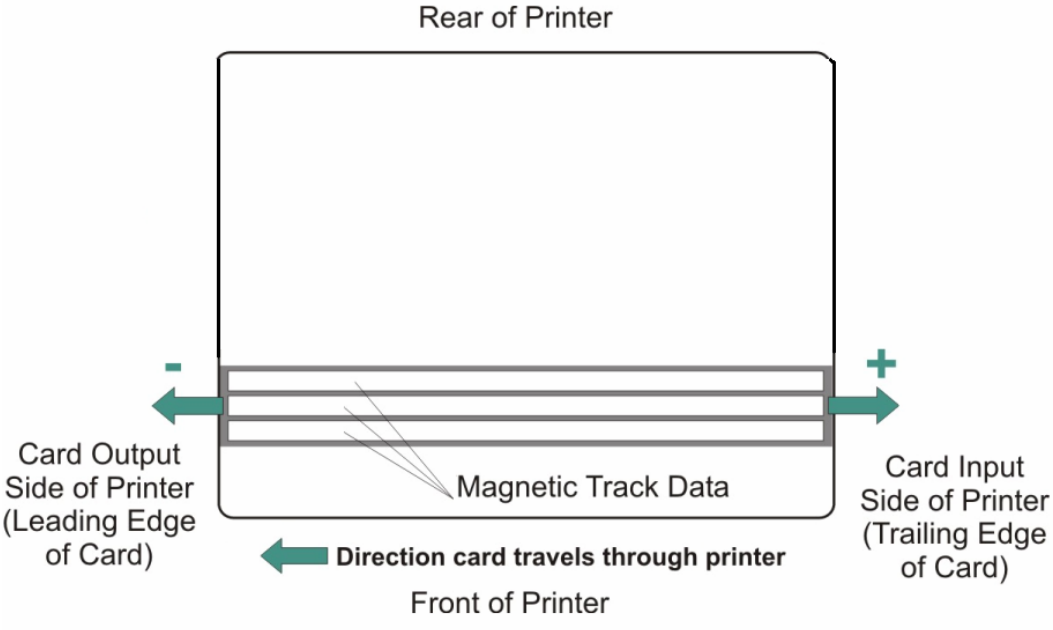
Using the Mag Top of Form Option

Use this option only if the Printer has a built-in Magnetic Stripe encoder. (**Note:** If so, use this option to shift the starting point of where the Printer will begin encoding the magnetic track data on a card's Magnetic Stripe. When adjusting this value, keep in mind that a card and its Magnetic Stripe will always remain in the same relative position as the card travels through the Printer.)

The diagram (below) represents how the magnetic data will move in relation to the fixed position of a card's Magnetic Stripe as a positive or negative Magnetic Offset value is entered. (**Note:** For this diagram, imagine that the card is transparent and the card's Magnetic stripe can be seen through the top or front side of the card.)

Step	Procedure
1	Enter a negative value to move the start of the magnetic data more toward the leading edge of the card, or the card output to the side of the Printer. **OR** Enter a positive value to move the start of the magnetic data toward the trailing edge of the card, or the card input to the side of the Printer. • **Magnetic Data Direction:** The arrows on these buttons indicate the direction the magnetic data will move on the card's Magnetic Stripe. • **Maximum Adjustment Range:** The maximum adjustment range is ±127. As a rule, 20 equals about .030"/. 8mm.) (**Note:** Keep this in mind when adjusting this option to avoid over-adjusting.) **Caution:** If the negative value is set too high, the Printer may start encoding before the card's Magnetic Stripe reaches the encoding head.

Using the Mag Top of Form Option (continued)


Rear of Printer
-
+
Card Output Side of Printer (Leading Edge of Card)
Magnetic Track Data
Card Input Side of Printer (Trailing Edge of Card)
Direction card travels through printer
Front of Printer

Using the Ribbon Tension Option

Step	Procedure
1	Use the Ribbon Tension option to increase the amount of tension (drag) on the ribbon during printing. Enter a negative value to decrease the amount of tension that is placed on the ribbon during printing **OR** Enter a positive value to increases the amount of tension that is placed on the ribbon during printing.

Using the LCD Contrast Option

Use this option to adjust the contrast of the LCD.

Step	Procedure
1	Enter a positive value to increase the contrast of the LCD display on the front of the Printer. **OR** Enter a negative value to decrease the contrast of the LCD display on the front of the Printer.

Using the Flipper Home Offset Option

Use this option to change the Flipper angle relative to home/horizontal position. This is done in order to adjust angle of travel to and from the Printer and Flipper Module.

Step	Procedure
1	Enter a negative value to position a card to enter the Printer at an upward angle. **Or** Enter a positive value to position a card to enter the Printer at a descending angle. (**Maximum Adjustment Range:** The maximum adjustment range is ±5. 1 is approximately 1 degree.)

Using the Flipper Center Offset Option

Use this option to change the card position on the Flipper Table, relative to the center, for flipping. (**Note:** This is important to maintain the proper clearance with surrounding objects when flipping a card.)

Step	Procedure
1	Enter a negative value to position a card closer to the output of the Printer when the Flipper is in home/horizontal position. **Or** Enter a positive value to position a card closer to the output of the Flipper Module when the Flipper is in home/horizontal position. (**Maximum Adjustment Range:** The maximum adjustment range is ±127. As a rule, 20 equals about .030”/.8 mm, which is about the same as the thickness of a standard CR-80 size card.) **Caution:** If the offset is set too high or low, the card may jam in the Flipper Module when flipping.

Using the Flipper Smart Angle Offset Option

Use this option to change the Flipper angle relative to the default smart card loading position. This is done in order to adjust travel to and from the Flipper and the Smart Card Docking Module.

Step	Procedure
1	Enter a negative value to decrease the amount of Flipper angular movement from the home position to the smart card loading position. **Or** Enter a positive value to increase the amount of Flipper angular movement from the home position to the smart card loading position. (**Maximum Adjustment Range:** The maximum adjustment range is ±5. 1 is approximately 1 degree.)

Section 7: Cleaning

The Card Printer is built to require a minimum amount of maintenance. Nevertheless, there are a few procedures you can perform on a regular basis or as needed to ensure the best possible performance

Safety Messages (review carefully)

Symbol	Critical Instructions for Safety purposes
Danger:	**Failure to follow these installation guidelines can result in death or serious injury.** Information that raises potential safety issues is indicated by a warning symbol (as shown to the left). • **To prevent personal injury**, refer to the following safety messages before performing an operation preceded by this symbol. • **To prevent personal injury**, always remove the power cord prior to performing repair procedures, unless otherwise specified. • **To prevent personal injury**, make sure only qualified personnel perform these procedures.
Caution:	**This device is electro statically sensitive. It may be damaged if exposed to static electricity discharges.** Information that raises potential electrostatic safety issues is indicated by a warning symbol (as shown to the left). • **To prevent equipment or media damage**, refer to the following safety messages before performing an operation preceded by this symbol. • **To prevent equipment or media damage**, observe all established Electrostatic Discharge (ESD) procedures while handling cables in or near the Circuit Board and Printhead Assemblies. • **To prevent equipment or media damage**, always wear an appropriate personal grounding device (e.g., a high quality wrist strap grounded to avoid potential damage). • **To prevent equipment or media damage**, always remove the Ribbon and Cards from the Printer before making any repairs, unless otherwise specified. • **To prevent equipment or media damage**, take jewelry off of fingers and hands, as well as thoroughly clean hands to remove oil and debris before working on the Printer.

Using the Required Supplies

For the maintenance procedures outlined for the Printer, you will need a Printer Cleaning Kit, available from the reseller. This kit includes the following:

- Printhead Cleaning Swabs pre-moistened with 99.99% isopropyl alcohol for cleaning the Printer's Printhead.
- Cleaning Cards with an adhesive backing for cleaning the Printer's Card Feed Rollers and Platen Roller.
- Cleaning Pads pre-moistened with 99.99% isopropyl alcohol for cleaning the Printer's general inside and outside area.

Caution: As with any electronic device, internal components of the Printer, such as the Printhead, may be damaged if exposed to static electrical discharges.

- To avoid potential damage, always wear an appropriate personal grounding device, such as a wrist strap (with integral resistor) connected to an ESD ground.

Cleaning Procedures

Cleaning the Printhead

Perform this procedure during every **1000 prints** to maintain consistent print quality. Also, perform this procedure after noticing a streak on the card where color was not transferred.

Warning: Never use a sharp tool or abrasive object of any kind to clean the Printhead, which can damage it.

Step	Procedure
1	Open the Printer's Front Cover.
2	Remove print ribbon
3	Use a **Printhead Cleaning Swab** from the Printer Cleaning Kit to gently rub back and forth over the entire length of the Printhead 3 to 4 times
4	Once the Printhead is completely dry, replace the ribbon cartridge and close the Printer. **Caution:** If a streak persists, use an Acetone compound to clean the Printhead.

Cleaning the Card Feed and Cleaning Rollers

The Card Feed Rollers move the card throughout the print process. The Cleaning Roller removes dust particles from a blank card as it feeds into the Printer. Cleaning these Rollers will help prevent card jams and card contamination and will ultimately lead to better print quality and extended Printhead life.

Step	Procedure
1	Ensure a consistent Printer operation by cleaning these Rollers approximately every **1000 prints**, depending on the cleanliness of the card stock and the environment (in which the Printer is located). Clean the Rollers if the Rollers appear dirty or if the cards start showing speckles or debris on the printed surface by following Steps 2 to 7 (below).
2	Leave the Printer power ON and open the Printer's Front Cover.
3	Remove all cards from the Printer's Card Input Hopper.
4	Get a Cleaning Card from the Printer Cleaning Kit and remove its adhesive backing paper from both sides.
5	Insert the Cleaning Card into the card exception Single Feed Slot until the card stops.
6	You can choose between two procedures (below) for this procedural step. **Option A Procedure:** a. Open the Printer Control Panel from the Computer. b. Right click on the DTC400 Card Printer and select **Printing Preferences**. Click on the Calibrate tab. c. Click on the **Clean Printer** button. (See below.) d. Remove the Ribbon and close the front cover. e. Click on the **Clean** button. **OR** **Option B Procedure:** a. Remove the Ribbon and close the Front Cover. b. Press and hold the **Pause/Resume** button. (**Note:** The Printer will initiate a cleaning cycle by using the Cleaning Card to clean the Rollers of the card path. It will then eject the cleaning card.)

Cleaning the Printer's Exterior

The Printer has a durable casing that should retain its luster and appearance for many years. Clean it only with a **Cleaning Pad** from the Printer Cleaning Kit.

Caution: Do not use cleaning solvents of any kind or spray the Printer's exterior with a cleaner!

Cleaning the Printer's Interior

Dust and other particles may accumulate inside the Printer with continued usage. These particles are attracted to the Print Ribbon or blank card by static produced during printing and can contaminate the printed card causing spots or speckles to appear. Periodically, use the following procedure to remove dust and other contaminants:

Step	Procedure
1	Open the Printer's Front Cover.
2	Remove the Ribbon Cartridge from the Printer.
3	Use a **Cleaning Pad** from the Printer Cleaning Kit to wipe out all visible areas inside the Printer. Remove any debris that may be inside. Be extremely careful not to let any alcohol drip inside the Printer!
4	Re-install the printing supplies and close the Printer.

Section 8: Packing the Card Printer

The purpose of this section to provide the User with a specific packing procedure for this Card Printer.

Follow this instruction to pack the Card Printer for transport.

Step	Procedure
1	Clean the inside of the Printer with compressed air.
2	Wipe it down with a lint-free cloth.
3	Clean the Printhead with a alcohol swab.
4	Pack the Printer in the original carton and packing materials.
5	Ensure to enclose any necessary paperwork, test cards, etc.

Section 9: Board Level Diagnostics

The purpose of this section to provide the User with specific Board Level Diagnostic procedures for Board Errors and Sensor Testing for this Card Printer.

Safety Messages (review carefully)

Symbol	Critical Instructions for Safety purposes
Danger:	**Failure to follow these installation guidelines can result in death or serious injury.** Information that raises potential safety issues is indicated by a warning symbol (as shown to the left). • **To prevent personal injury**, refer to the following safety messages before performing an operation preceded by this symbol. • **To prevent personal injury**, always remove the power cord prior to performing repair procedures, unless otherwise specified. • **To prevent personal injury**, make sure only qualified personnel perform these procedures.
Caution:	**This device is electro statically sensitive. It may be damaged if exposed to static electricity discharges.** Information that raises potential electrostatic safety issues is indicated by a warning symbol (as shown to the left). • **To prevent equipment or media damage**, refer to the following safety messages before performing an operation preceded by this symbol. • **To prevent equipment or media damage**, observe all established Electrostatic Discharge (ESD) procedures while handling cables in or near the Circuit Board and Printhead Assemblies. • **To prevent equipment or media damage**, always wear an appropriate personal grounding device (e.g., a high quality wrist strap grounded to avoid potential damage). • **To prevent equipment or media damage**, always remove the Ribbon and Cards from the Printer before making any repairs, unless otherwise specified. • **To prevent equipment or media damage**, take jewelry off of fingers and hands, as well as thoroughly clean hands to remove oil and debris before working on the Printer.

Sensor and Motor

Reviewing the Sensor Location and Voltages

Use this table as a reference tool for Board Level Diagnostics

Sensor	Location	Pin	Low Range VDC	High Range VDC
RFID Board	J5	3	Present .02	Not Present .70
Headlift	J9	1, 3 (+, -)	Not Depressed 0 - .17	Depressed 4.9 – 5.5
Print Cover Sensor (Sensor mounted to Main Board)	J4	1, 2 (+, -)	Not Depressed 0 - .17	Depressed 4.9 – 5.5
Print Ribbon Encoder Sensor	J4	3,4 (+, -)	Unblocked 0 -.17	Blocked 4.9 – 5.5
Card Detection Sensor	J4		Unblocked 0 -.17	Blocked 4.9 – 5.5

Reviewing the Motor Voltages (when active)

Use this table as a reference tool for Board Level Diagnostics

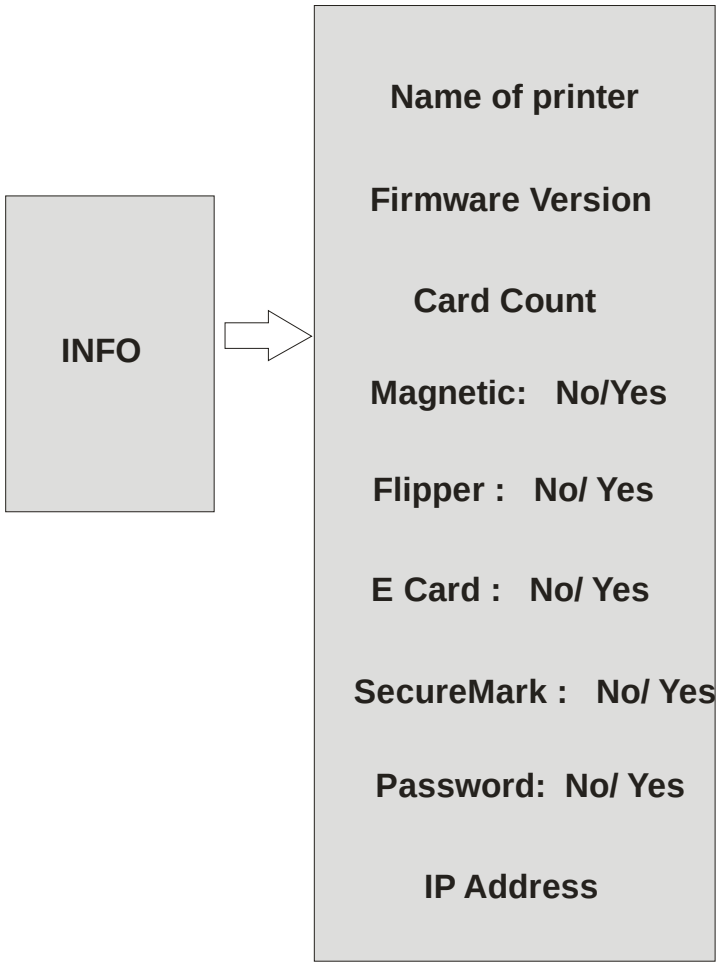
Motor	Location	Pin	VDC
Print Drive Stepper	J3	4	4
Print Headlift	J20	6	17.0
Ribbon Drive	J20	8	5

Section 10: Menu Option Tree

Accessing the Menu Option Structure Tree

When the Printer is powered on and sitting idle, a **MENU** option appears above the center soft key buttons. Use this menu option to access several Printer-related functions, as shown below. Refer to the Menu Option Structure Tree for all available menu options.

Selecting from the Menu Option Structure Tree (displayed, below)

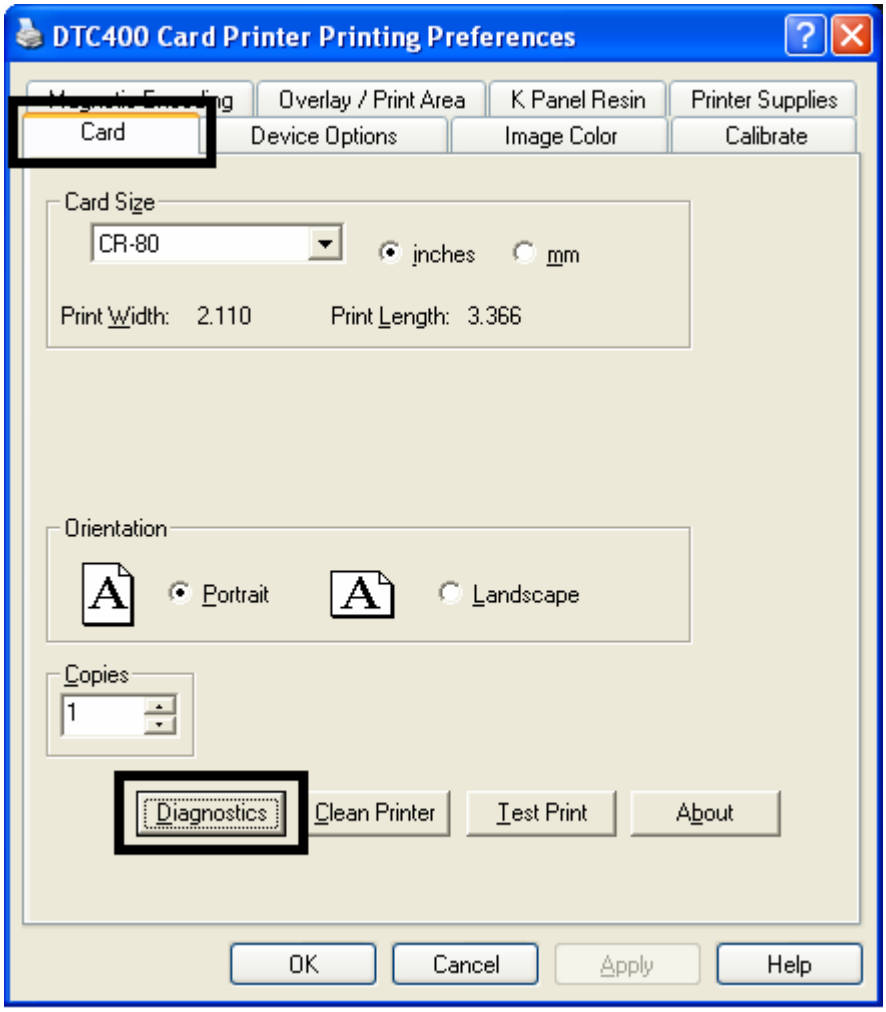


Section 11: Fargo Workbench Printer Utility

Click on **Diagnostics** to bring up the Fargo Workbench Printer Utility. See the **Fargo Workbench Printer Utility Help File** for further instructions on each option.

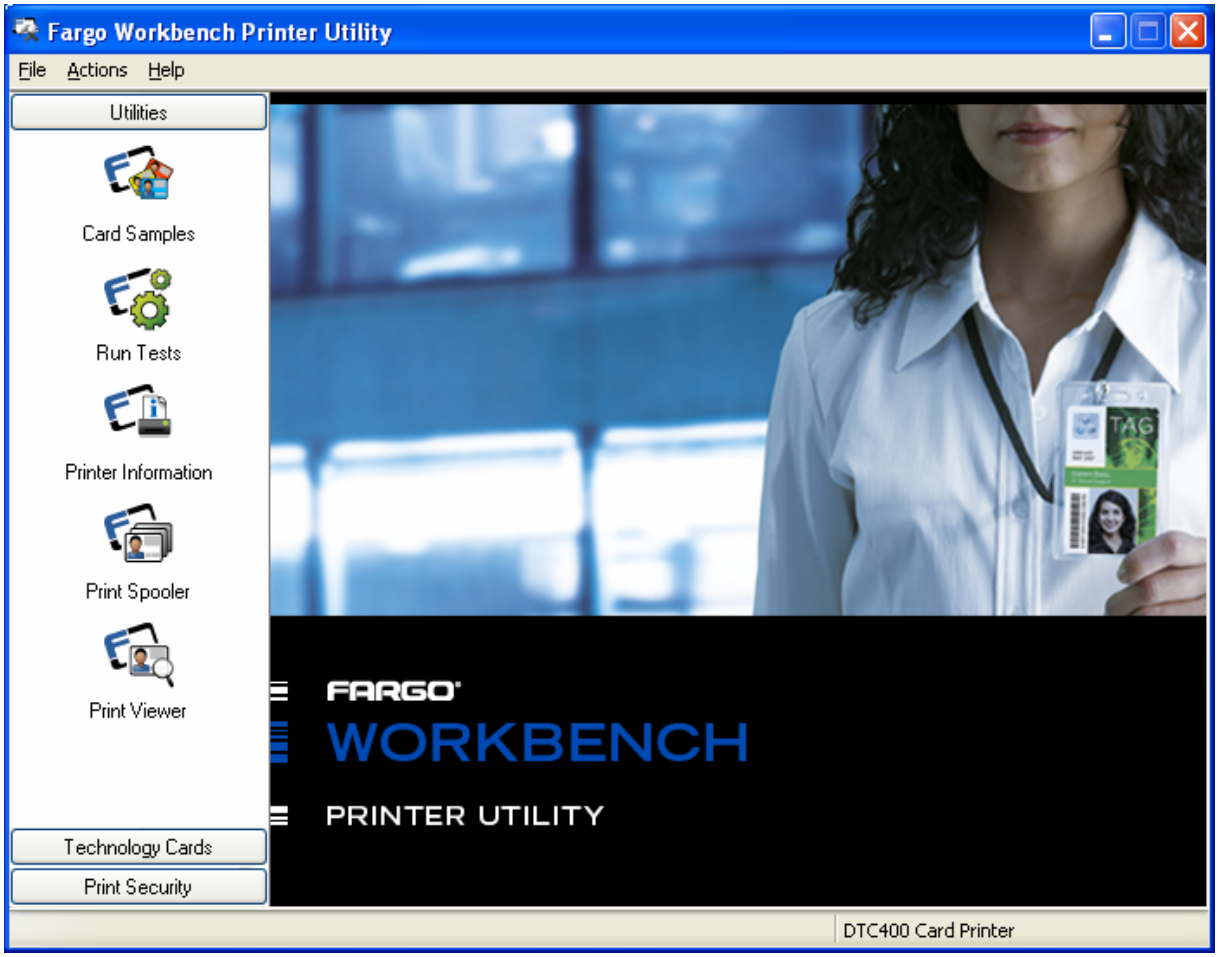
Reviewing the Card tab and Diagnostic button

Display A – Card tab > Diagnostics button



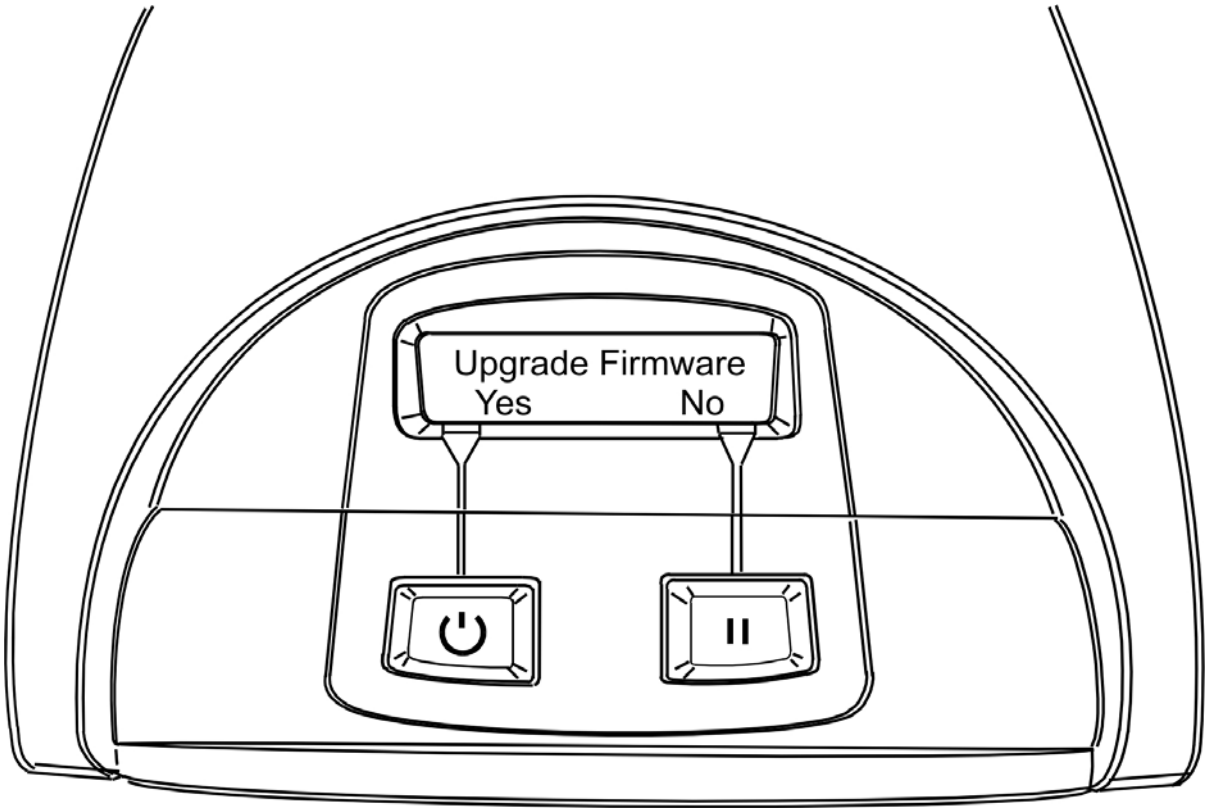
Reviewing the Card tab and Diagnostic button (continued)

Display B – Fargo Workbench Printer Utility (see appropriate User Guide located on your CD)



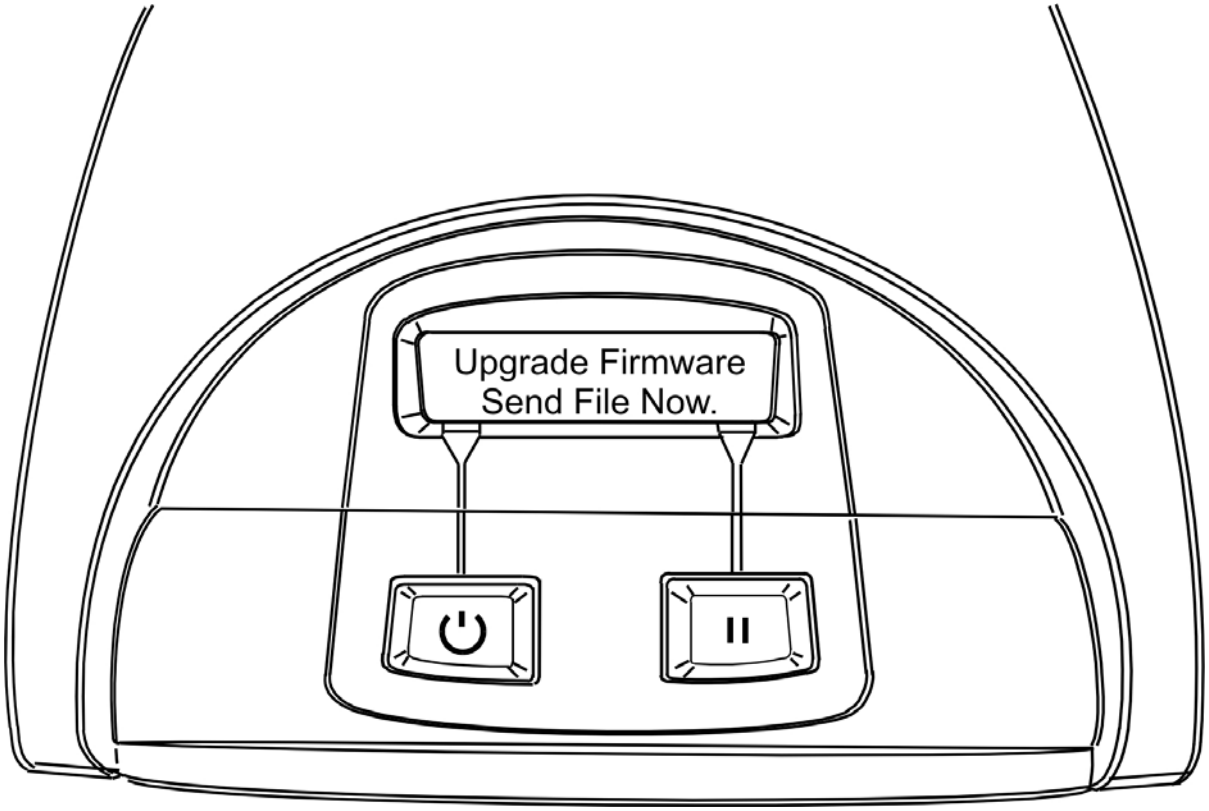
Placing the Printer in the Firmware Upgrade Mode

Step	Procedure
1	**Caution:** Turn off the Printer and unplug the power cord from the Printer.
2	Press and hold down the **Power** and **Pause** buttons on the Printer, as shown below.
3	Continue to hold down both the **Power** and **Pause** buttons as the power is reapplied, hold the buttons down for two (2) seconds after the power has been restored and then release. (**Note:** The LCD display should now show the Upgrade Firmware message, as shown below).
4	Press the **Yes** button on the LCD to continue with the Firmware Upgrade.



Placing the Printer in the Firmware Upgrade Mode (continued)

Step	Procedure
2	Ensure that the Printer LCD displays this message: as shown below **Upgrade Firmware** **Send File Now.**



Section 12: Firmware Updates

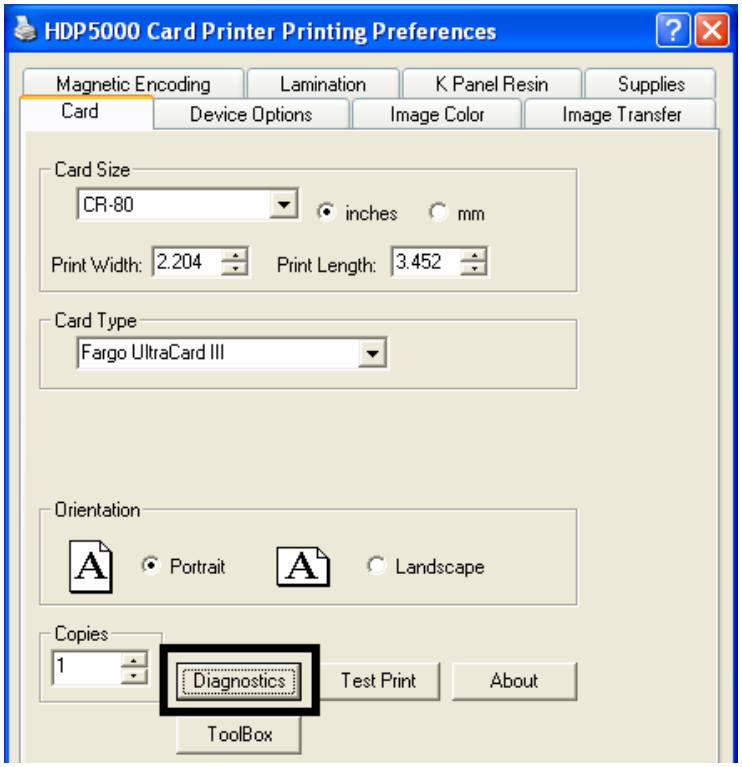
The purpose of this section is to provide the User with information on the internal software or Firmware, which controls all aspects of the Printer's operation. New Firmware versions may be released containing enhancements, such as improved reliability, added features or better print quality. New Firmware updates can be downloaded from the Internet.

- Refer to the **Fargo Workbench Printer Utility User Guide** to download and install Firmware updates. See the Fargo website to access this document.
- **Important:** This is a new Printer. Once new Firmware is released and made available (via Step 2 below), Steps 3 through 14 in this procedure will enlarged with “real world” populated windows and dialogs. Until that time, please review this procedure only for future use.

Performing the Firmware Updates

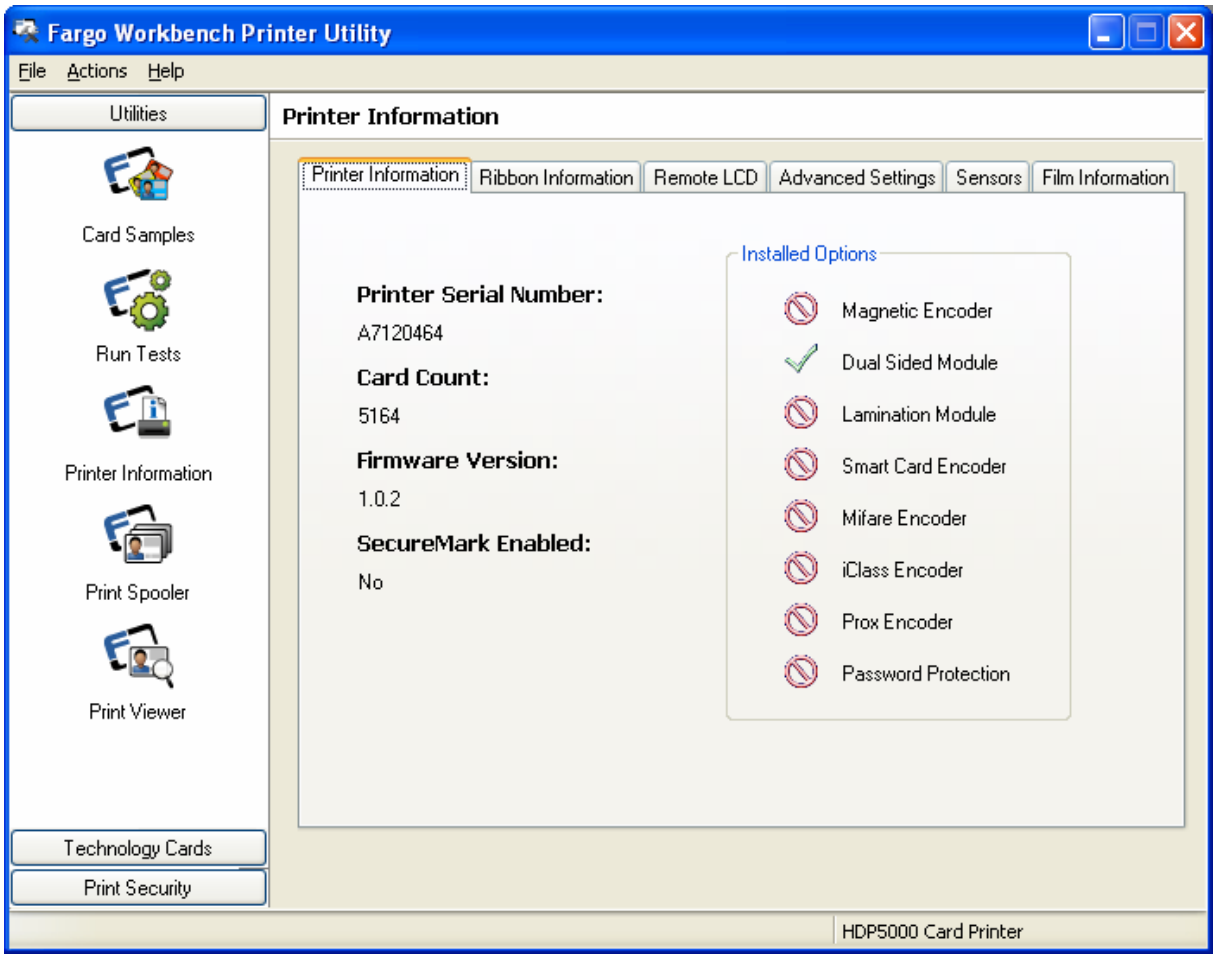
Step	Procedure
2	Type in: www.fargosupport.com to bring up the web site, as shown below.

Display A – Card tab (Diagnostics button)



Performing the Firmware Updates (continued)

Display B – Fargo Workbench Printer Utility (Printer Information tab)



Performing the Firmware Updates (continued)

Step	Procedure
2	Type in: www.fargosupport.com to bring up the web site, as shown below.
3	This will launch the Fargo Support page. **Important:** There is no new Firmware (available) for this new Printer at this time. • Click on the **Firmware** selection box. • Using the drop down menu select the Printer. • Click on the **Go** button, as shown below.

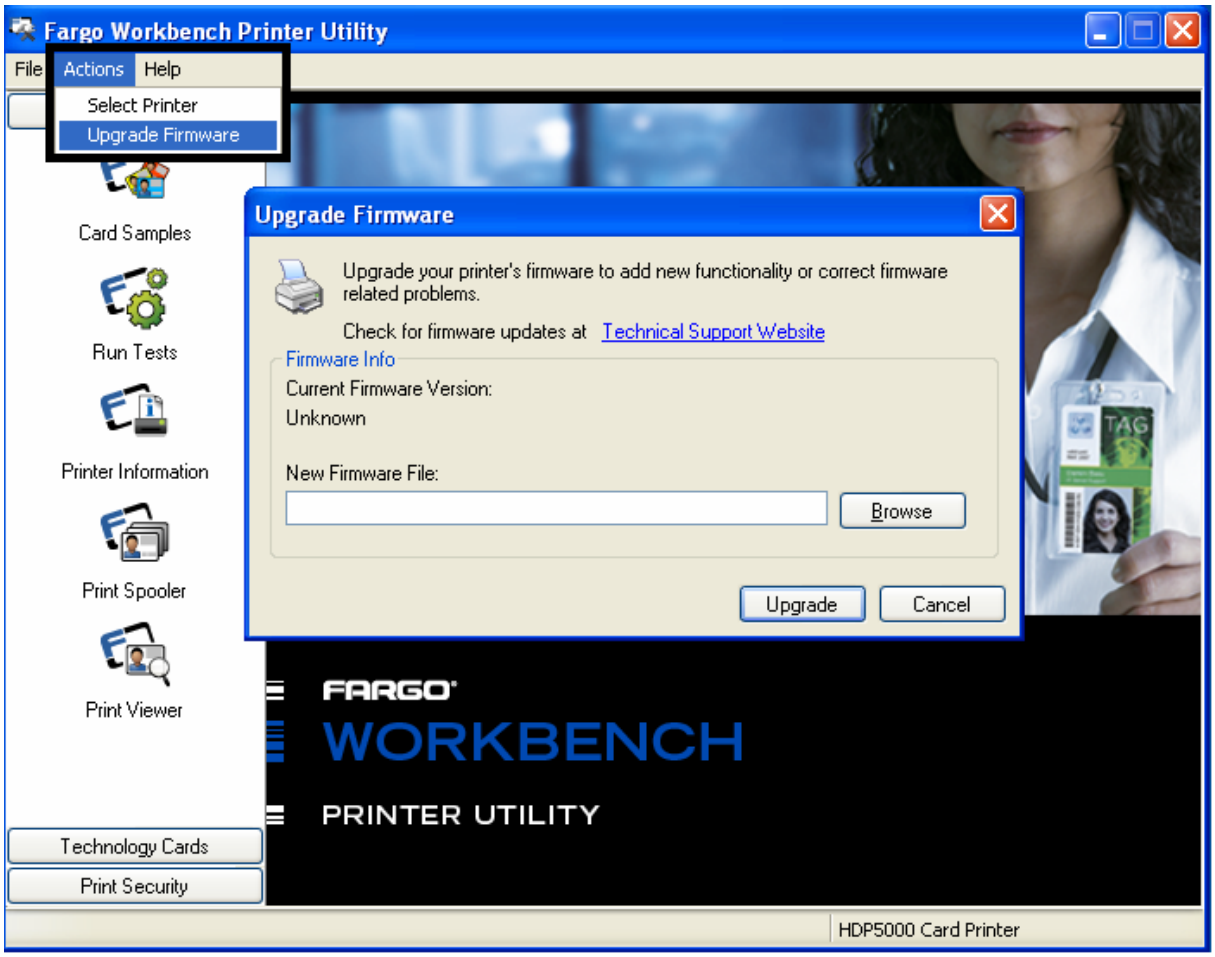
FARGO Tech Support - Microsoft Internet Explorer
File Edit View Favorites Tools Help
Back Search Favorites
Address http://www.fargosupport.com/
Go Links
FARGO
FARGO Web Si
Tech Support
Drivers, Firmware & User's Guides
Troubleshooting
Software
Archive
Register
Warrantie
Tech Support: Home
This Web site is designed to support you and your FARGO Card Printer. Download printer drivers, printer firmware, user's guides and troubleshooting information. Or find an Authorized Service Provider in your area. If you don't find what you need, please contact us and we'll get back to you right away.
Tech Support: Search
What do you need?
Drivers
User's Guides
Firmware
Diagnostic Tools
All
For what product?
HDP5000
Go
Internet

Performing the Firmware Updates (continued)

Step	Procedure
4	Click on the Printer name under **Printer Firmware** to begin the download, as shown below.
5	Click on the **Save** button to save the file, as shown below.
6	Click on the **Save** button to save the file to the computer's Desktop, as shown below.
7	Click on the **Close** button to close this dialog when the download is completed, as shown below.
8	From the computer's desktop, double click on the Firmware .exe file to un-zip it, as shown below.
9	Click on the **Browse** button on the WinZip Self-Extractor window, as shown below.
10	Select the Desktop, then click on the **OK** button in the Browse for Folder dialog, as shown below.
11	Click on the **Unzip** button in the WinZip Self-Extractor window to unzip designated files, as shown below

Performing the Firmware Updates (continued)

Step	Procedure
12	Select **Upgrade Firmware** in the Action dropdown menu, as shown below. This brings up the Upgrade Firmware window, as shown below. See the Fargo Workbench Printer Utility User Guide at this time.



Performing the Firmware Updates

Step	Procedure
13	• Select the Desktop dropdown menu. • Click on the .frm file. • Click on the **Open** button, as shown below.
14	**This completes the Downloading Firmware procedure.**

Section 13: Fargo Technical Support

The purpose of this section to provide the User with an efficient, step-by-step procedure to be used when contacting Fargo Technical Support as needed for this Card Printer.

Contacting Fargo Technical Support

Step	Procedure
1	Refer to Section 3: General Troubleshooting as needed. Contact the Fargo Technical Support Group by phone at (952) 941-0050 or by fax at (952) 941-1852 for additional technical assistance. **OR** Contact Fargo Technical Support via the Web: http://www.fargosupport.com
2	Position a phone near the Printer and Computer so Fargo technicians can help to help troubleshoot the Printer(s).
3	Please have a self-test and a sample card ready when calling Fargo Technical Support.

Reading the Serial Numbers on a Fargo Printer

The purpose of this section is to provide updated instructions for reading serial numbers on a Fargo Printer.

Finding out when a Fargo Card Printer was manufactured

You can determine when your card Printer was manufactured by reading directly from the serial number (affixed to your card Printer).

1. **Year Built:** The first two digits in the serial number indicate the year that the Printer was manufactured.
2. **Week Built:** The second two digits indicate the week.
3. **Numeric Order:** The last four digits indicate the sequence number for the numeric order in which the Printers were built.

Reviewing Example No. 1: Serial Number 80453289

1. **80453289:** The first two digits in the serial number indicate the year the Printer was built (e.g., the digits 80 indicate the year 1998).
2. **80453289:** The third and fourth digits in the serial number indicate the week the Printer was built (e.g., the digits 45 indicate week 45 of that year).
3. **80453289:** The last four digits indicate the sequence number for the numeric order in which the Printers were built.

Reviewing Example No. 2: Serial Number A1280224

1. **A1280224:** The first two digits in the serial number indicate the year the Printer was built (e.g., the letter and digit A1 indicate the year 2001).
2. **A1280224:** The third and fourth digits in the serial number indicate the week the Printer was built (e.g., the digits 28 indicate week 28 of that year).
3. **A1280224:** The last four digits indicate the sequence number for the numeric order in which the Printers were built.

Section 14: Glossary of Terms

Term	Definition
24-bit color	A color depth for an image that uses 8 bits for each color (red, blue, green) combining the possible 256 shades to provide a color depth of 16.7 million colors.
AC - Alternating Current	An electrical current that reverses its direction at regular intervals (typically 50 - 60 times a second).
Access Card	The card for the SmartGuard security system. A cared with embedded electronics that can be removed from the Printer, locking the Printer and preventing unauthorized use.
Adhesion	The firm attachment of a material to the card surface, confirmed by using the Tape Test -pulling an applied piece of adhesive tape (Scotch 600 or equivelent) off the card at 1 sec/in to see if any material is pulled off by the tape.
Algebraic	A type of color matching that takes the colors value of pixels and applies them to an algebraic equation to adjust the levels of hue, saturation and brightness.
ANSI (American National Standards Institute)	The United States Representative to ISO, providing standardization for U.S. Manufactures prior, or in addition, to acceptance by ISO.
AS400	An IBM operating system running on a main frame. DTC500 Fargo Printers are built with fonts saved in the Printer memory so users of AS400 can write escape codes and print from the Printer.
ASCII (American Standard Code for Information Interchange)	A standard for processing information in computer processors. An 8-bit character set of 255 decimal numbers, each assigned to numbers, letters, punctuation and special characters.
AT	Refers to an IBM standard in early computing with regard to the chipset and function of the parallel port, set up in the BIOS.
B (Black)	Black Dye-Sublimation panels are distinguished from the black panel using resin by the use of B for dye sub black. K denotes resin black.

Continued on the next page

Glossary of Terms (continued)

Term	Definition
Barcodes	A series of alternating black and white stripes, of varying widths (each character denoted by a set number and width of black stripes) that allows characters to be optically read by a computer.
Batch print	A file sent down from the computer that contains commands to print a number of cards, sequentially.
Battery Back-up	A power supply that can keep AC electronic equipment running for a short time when power is interrupted, allowing enough time for the user to save data and close the machine properly.
Bi-directional	A communication standard that allows two way data transfer between PC and Printer.
BIOS (Basic Input/Output System)	The part of the operating system in a computer that handles communication between the PC mainboard and its peripherals. Typically residing in chip-based, non-volatile memory.
Bit	An abbreviation for binary digital. Each bit is an element of information that can have two states: off and on.
Bit map	A graphic produced by an array of pixel elements with the color hue, brightness and saturation information stored in bits. The more bits, the more values and thus the greater variety. 1 bit color is black and white, 8-bit color produces 256 shades of gray and 24-bit color can produce 16.7 million colors.
Board	A term used for the circuit board, a hard mylar plate made of many layers, that holds the electronic circuit elements and wire traces.
Boot-up	A series of operations that the Printer runs through when power is first applied including a series of initializing, status testing and a diagnostics program to ensure a ready state.
Buffer	A block of memory, in the Printer or PC, that holds print files until the processor is ready to print them.
Cable	A set of conductors wrapped together and often concealed within insulation, used for signal transfer from one device to another, with connectors on either end that allows the cable to be removed.

Continued on the next page

Glossary of Terms (continued)

Term	Definition
Cache	A type of memory buffer to store data temporarily, used to hold information that is most often exchanged between contRoller and peripheral, to expedite data transfer.
Calibrating	A procedure to adjust an electro-mechanical device so that it operates within established parameters.
Cleaning Roller	High tack Rollers positioned just after the input Hopper to lift debris off the card as it rolls over it. A clean card surface improves print quality.
CD (Compact Disc)	A 4.75 inch (12 cm) optical disk that stores data, written too and read from using a laser.
DMA (Direct Memory Access)	Channels designated within the Windows operating environment that are used for dedicated high-speed communication between the PC and the Printer port.
Centronics	A parallel communications interface that has become the standard for connections to Printers, designed by the Centronics Corp.
Coercivity	The property of a Magnetic Stripe that indicates the amount of force needed before magnetic saturation, measured in Oersted (Oe).
Color matching	The process of adjusting color hue, saturation and brightness, to duplicate a desired color. An algorithm within the Driver, which adjusts the color balance and provides output with the desired color, automates this process.
Compressed air	Air stored in a tank or produced by an aerosol can, delivered by through nozzle at a high speed. Used in the Printer to blow out debris.
Contrast	The degree of difference in luminance of two areas.
Control panel	The panel on the Printer from which the user can control Printer functions. The Printer is usually composed of the control buttons and an LED or LCD display.

Continued on the next page

Glossary of Terms (continued)

Term	Definition
CR-79	A card dimension standard of 2.0625" L X 3.3125" W (+/-0.002" W, +/-0.005" L) or 52.400 X 84.150 mm.
CR-80	A card dimension standard of 2.125" X 3.370" (+/-0.002" W, +/-0.005" L) or 53.975 X 85.598 mm.
CR-90	A card dimension standard of 2.375" X 3.625" (+/-0.002" W, +/-0.005" L) or 60.325 X 92.075 mm.
CR-100	A card dimension standard of 2.625" X 3.875" (+/-0.002" W, +/-0.005" L) or 66.675 X 98.425 mm.
Cursor	The marker in the LCD Display Window that indicates the active selection.
Darkness	A reference to color saturation.
DB-9	A 9 pin, D-shaped connector, typically used in serial port interfaces.
DC Motor	A Motor that works on DC with continuous motion.
DC (Direct Current)	Electronic flow that is unidirectional, flowing from the positive (+) to negative (-) of a power source.
Default	A setting or parameter that comes preset from the factory in Driver or firmware. Performance parameters may be customized in the Driver, but can be reset to the factory values usually through the push of the default button. The default values for the firmware are usually denoted on a label attached to the Printer.
Defrag	Abbreviation for defragmenting. The process of reformatting data on a hard Drive so that it uses space more efficiently.
DIP switches (Dual In-line Package Switches)	A small array of mechanical switches installed on the board that can be configured to change Printer operations including providing a variety of self-tests.

Continued on the next page

Glossary of Terms (continued)

Term	Definition
Direct-to-Card (DTC) Printing	The Direct-to-Card printing process prints digital images directly onto any plastic card with a smooth, clean, glossy PVC surface.
Dither	A system of distributing dots to control the hue, brightness and/or saturation. In monochrome printing, this controls the brightness. In color printing, dithering can supply a larger color gamut than non-dithering. In the Driver, dither modes can be selected to provide better image quality depending on the type of image to be printed.
Dongle	A peripheral that attaches to a port to act as a key for an installed application. The PC is able to run that application only when the dongle is installed. Typically, it works as a pass-through device and is connected in serial to the parallel cable.
Dot	The smallest unit of an image that the Printer is able to produce. The smaller the dot, see dot pitch, the sharper the image.
Dot pitch	A measurement of image sharpness denoting the width of the dots that make up a pixel. The smaller the pitch, the sharper the image.
Download	The transfer of a data file from one device to the other over a network or cable, typically from the Internet to a PC.
DPI (Dot Per Inch)	A measurement of the Printer resolution indicating how many dots a Printer can produce in a linear inch.
DRAM (Dynamic Random Access Memory)	A microchip based volatile memory storage device. The Printer uses this to buffer a print job, transferred from the PC, until the Printer contRoller is able to process the packet.
Driver	Software utility installed in Windows, that interfaces an application to rasterize image data and include command codes so the Printer can process the file.
Duplex Printing	Printing on the front and the back of the card.

Continued on the next page

Glossary of Terms (continued)

Term	Definition
Dwell Time	The speed at which the card moves across the lam Roller, measured in seconds/inch (secs/in). This may be adjusted in the Driver to ensure adhesion and card flatness.
Dye Migration	The diffusion of dye out of the card surface and into another receptive surface, such as a vinyl pouch card holder, resulting in a faded image.
Dye-Sublimation	Also called dye diffusion/thermal transfer, it is the process of heating a dye suspended in a cellulous substrate until the dye can flow, diffusing into the dye receptive surface of the card or InTM. This produces the image in the surface of the card.
E-card	An abbreviation for electronic card. A generic term used to reference any card with built-in electronic devices such as smart cards or prox cards.
E-card Docking Station	The device in the Printer that accepts smart cards with an ISO smart card contact station. This allows the user to write to the smart card chip with a standard RS-232 interface in the back of the Printer or with the optional built-in encoder.
Edge-to-Edge	Refers to the maximum printable area on a card resulting in printed cards with virtually no border.
ECP Mode (Enhanced Capabilities Port Mode)	A type of parallel port mode, developed by Microsoft, to increase the port throughput and improve performance.
EE Memory	An abbreviation for EEPROM.
EEPROM (Electrically Erasable Programmable Read Only Memory)	A microchip based non-volatile memory storage device that can be rewritten in the field. The chip can hold new values as the Printer adapts its operational parameters.
Encoder (smart card)	An electro-mechanical interface to transfer data from the PC to a chip or Magnetic Stripe built into the card.

Continued on the next page

Glossary of Terms (continued)

Term	Definition
Encoder (wheel)	An electromechanical device, attached to a shaft that detects the change in rotational position, incremented to count ticks per revolution. The Printer's encoder wheel both detects motion and measures the amount of rotation in the movement of the Ribbon.
Engine	A generic term for a collection of systems and mechanisms that is dedicated to executing a specific function. A Printer that also laminates would have both a print engine and a lamination engine.
EOF (End Of Form)	The trailing edge of the card, detected to indicate when the Printer should stop printing.
EPP (Enhanced Parallel Port)	A type of parallel port mode, developed by Intel, to increase the port throughput.
EPROM (Electronically Programmable Read Only Memory)	A microchip based non-volatile memory storage device that cannot be rewritten in the field. Firmware for many Fargo Printers is stored on these chips and so a change of the chip is necessary for an upgrade.
Escape sequence	A string or control character that indicates to the processor that what follows is a command and not data.
ESD (ElectroStatic Discharge)	The discharge of static electricity (high voltage, low current) that can damage electronic devices.
Ethernet	A system of networking a series of computers for the sharing of data or peripherals.
Film	A thin flexible transparent sheet used to carry dye-impregnated material or resin to be transferred to the card.
Firmware	The instruction set, stored in chip memory, inside the Printer that controls functional and operational data. Some models require a chip change for updates; some firmware can be changed by reprogramming from the PC.

Continued on the next page

Glossary of Terms (continued)

Term	Definition
Flash Memory	A microchip based non-volatile memory device that holds its data when power is removed. This allows for field reprogramming of the Printer commands, such as Printer firmware upgrades, without the necessity of changing chips.
Font	A character set similar in style and form. Fonts can be graphical or mathematical constructs, represented by a series of dots or an assembly of curves and lines.
FPGA (Field Programmable Gate Array)	A microchip with configurable logic circuits installed that is programmed to act as the Printer's central processor.
Full bleed	Printing that covers the entire card surface.
Gamma	The degree of contrast of an image or the display of a monitor determined by the slope of a characteristic curve relating optical density to relative log exposure.
Glossy / Matte	A smooth polished surface in comparison to a rougher matte surface. Fargo matte cards have a surface index (Ra) of approximately 65 microinches while glossy have a Ra = 3.
Glossy PVC	A card made of PVC with a smooth polished surface (Surface roughness of approximately 0 - 10 micro-inches). This is required for direct to card dye-sublimation printing.
Graphical Device Interface (GDI)	A Windows standard for protocol between Drivers and applications and the Windows interface. An application uses a Driver to rasterize the data in the format necessary for the Printer but also for the Windows interface to execute the print commands.
Gray Scale	A graduation through the various brightness levels from white to black.
Halftoning	A process in monochrome printing that simulates continuous tone by using changes to the distribution of single dots. Increasing the number of dots in a given area increases the darkness even though the individual dots stay the same size.

Continued on the next page

Glossary of Terms (continued)

Term	Definition
Hard Drive	A high capacity storage device in a PC consisting of non-removable magnetically encodable platters.
Hardware	Physical components of a system such as the Printer, the PC, the power supply.
HDP (High Definition Printing™)	The High-Definition Printing process prints full-color images onto clear HDP transfer film (InTM). The HDP film is then fused to the card through heat and pressure via a heated Roller. The Printhead is capable of 256 shades with a sharper print and better color match.
Head	Abbreviation for Printhead.
Heat sink	A device used to dissipate heat into the ambient.
Heat Seal	A resinous film transferred by the Printhead onto the back of an HDP intermediate transfer film to facilitate adhesion.
HiCo (High Coercivity)	The coercivity value of magnetic media between 2500 - 4000 Oe (ISO 7811-6). Fargo's High Coercivity encodes at 2750 Oe.
HTML (HyperText Markup Language)	A standard protocol used to format text files for use in a browser or on the Internet.
HTTP (HyperText Transfer Protocol)	A standard protocol by which computers can transfer data, compatible through multiple platforms.
IC (Integrated Circuit)	An electronic device that contains many individual circuits interconnected and placed within a discrete package.
ID (Identification)	An abbreviation for identification.

Continued on the next page

Glossary of Terms (continued)

Term	Definition
IEEE 1284 (Institute of Electrical and Electronics Engineers 1284)	A standard method of signaling for a bi-directional parallel interface on personal computers. To ensure proper Printer communications and image output, Fargo recommends a parallel interface cable that complies with this specification.
Image	A collection of pictures or graphical elements that compose the visual features on a card. Also refers to the digital representation.
Input	Any data or material being transferred to the Printer.
Input Hopper	The area of the Printer that stores the blank cards, ready to print.
Intermediate Transfer Media (InTM)	A thin flexible material coated with a resin material into which the dye is transferred from the Ribbon by the Printhead. The film is then transferred to the card surface by the hot lamination Roller.
ISO	For the Greek, "iso", meaning same. Used to represent data from the International Organization for Standardization.
JIS II (Japanese Industrial Standard)	The standard for encoding to a Magnetic Stripe provided by the Japan Standards Association. The single track is as wide as ISO tracks 1 and 2 combined and in the same approximate location as those tracks but on the front of the card. The coercivity level is 600 Oe.
K Panel	An area of a multicolored Ribbon (e.g., YMCK) that contains black resin for transfer to the card surface. Also used in reference to the application of preference to items printed on the card - those using the black panel in lieu of a process (YMC) black.
Lamination	The application of a film or resinous substance, fused by heat and pressure, to the surface of a card.
LAN (Local Area Network)	An array of several computers connected through a series of data transfer cables for the sharing of data and peripherals.

Continued on the next page

Glossary of Terms (continued)

Term	Definition
Landscape	A document layout that is viewed with the document's long axis in a horizontal orientation.
LCD (Liquid Crystal Display)	A device that contains a liquid crystal between two pieces of polarized film through which reflected or ambient light can pass. When a current is applied, the liquid's polarity changes and blocks the passage of the light resulting in an opaque area of the display. The areas are arrayed to form characters.
LED (Light Emitting Diode)	A semiconductor that emits light when a current is applied.
Media	A generic reference to anything onto which the Printer can transfer an image including cards, Ribbon and film.
LoCo (Low Coercivity)	The coercivity value of magnetic media between 250 - 600 Oe (ISO 7811-2). Fargo's Low Coercivity encodes at 300 Oe.
LPT Port (Line Printer Port)	The system abbreviation for a PC's parallel Printer port.
Magnetic encoding	The process of orienting successive magnetic bits to produce a serial data string.
Magnetic stripe	An area of the card with an applied or impregnated ferrous material that may hold encoded data through a series of prescribed polarity changes.
Magnetic Track	An area of a magnetic strip running the length of the card, with a given width and position, constitutes a track. This is the area dedicated to one data string, restricted to specific rules of format. ISO Standards specify three magnetic tracks on the back of a card. The JIS standard specifies one track on the front.
Magnetic Verify	A process to confirm proper magnetic encoding. After encoding, the information is read off back and compared to the intended string.

Continued on the next page

Glossary of Terms (continued)

Term	Definition
MB (Megabyte)	A unit of storage that equals 1,048,576 bytes.
Memory	A generic term for any device that stores digital information using magnetic media or digital chip storage device.
Menu	A descriptive list of headings above nested functions that aid navigation to a specific operation. These are found in computer applications, with the heading at the top of a subset of like functions. They are also on the Printer LCD control panel.
Monochrome	An image composed of a single color.
Network	A series of computers connected by data transfer cable for communication and sharing of functions and peripherals.
Oersted (Oe)	The unit of magnetic field strength named after Dutch scientist Hans Christian Oersted who found the science of electromagnetism.
Offset	The prescribed distance between a reference point and the target point. The offset in card printing may refer to the position of the image relative to the leading edge or the distance of the start of magnetic encoding from the leading edge of the card.
O-Ring	A rubber ring used as a belt in several media driving applications.
OS (Operating System)	The instructions installed on the computer hard Drive that run the computer's operations and applications. The Driver used for any given OS will differ from other platforms. The correct version Driver must be loaded for the Printer to interface with the OS and the application to print.
Output	Any product of the Printer including card image, encoded data and lamination.
Output Hopper	The portion of the Printer that accepts the completed cards.
Overlay	A resin-like substance that is transferred by the Printhead to the card surface over a printed dye image to prevent image fading, increase abrasion durability and prevent dye migration.

Continued on the next page

Glossary of Terms (continued)

Term	Definition
Oversized Cards	Oversized cards are used for more efficient visual identification and are available in many non-standard sizes. The most popular sizes are CR-90 (3.63" x 2.37"/92mm x 60mm) and CR-100 (3.88" x 2.63"/98.5mm x 67mm).
Overlaminate	Protective clear or holographic material to increase security and durability applied over the printed surface with a hot Roller.
(Thin Film) Overlaminate	A 0.25-mil thick resin material that enhances card security and durability applied over the printed surface with a hot Roller. Available as clear or with embedded holographic-type security images.
Parallel	A method of data transfer in which serial data is divided into sections and sent simultaneously down parallel wires to speed transfer rate.
Parallel port	A communication socket on a device that allows for parallel data transfer.
PC (Personal Computer)	A stand-alone, programmable, electronic device that can store, retrieve and process data consisting of a CPU, mouse, keyboard and monitor.
PCB (Printed Circuit Board)	A solid, multi-layered plate on which electronic elements are attached, either through the board or on the surface.
Peel	The removal of a film or Ribbon from a card surface (at a perpendicular angle) to ensure proper transfer, then separation, from the card surface.
Peel-Off	A bar on the lamination section that holds the film at the correct position and provides proper peel angle.
Peripheral	Any device that is attached externally to a PC. These often share the same data cable or port as a Printer and may be the source of communication problems.

Continued on the next page

Glossary of Terms (continued)

Term	Definition
Pinch Roller	A free spinning (non-Driven) Roller that presses the card against the Drive Roller, on the opposite side, to ensure an adequate normal force for proper traction.
Pixel	Short for picture element. The smallest element of a graphic.
Platen	The hard rubber Roller that Drives the media through the Printer, providing support to the backside of the media during printing or laminating.
PET	Abbreviation for polyester terephthalate, often called polyester. Sheets of PET are laminated with sheets of PVC to produce thermal acceptance composite cards.
Port	A communication interface, serial or parallel, used for the transference of data.
PolyGuard Overlaminate	A 1-mil or .6-mil thick polyester material that enhances card security and durability applied over the printed surface with a hot Roller. Available as clear or with embedded holographic-type security images.
Portrait	A document layout that is viewed with the document's long axis in a vertical orientation.
Potentiometer	An electronic resistor with a variable resistance value that can be mechanically set.
Print Driver	A software utility that serves as an interface between the Printer and the Windows GDI (Graphical Device Interface), making the Printer's functions available through the software application. It also provides the format information for the rasterizing of the print file including any necessary escape or function commands.
Print Job	A file of one or more cards for the Printer to print, including image data and Printer functions, transmitted through the parallel interface and at times stored temporarily in the print buffer and spooler.
Print Server	A device used to connect and control a Printer on a network.

Continued on the next page

Glossary of Terms (continued)

Term	Definition
Printhead	The device on a Printer that produces the image on the media.
PVC	Abbreviation for polyvinyl chloride, often called vinyl. PVC is the component of the 0.002" thick clear, dye receptive film on the surface of the identification card and is the primary component of the identification card cores.
Queue	A sequence of files or sets of data, awaiting transmission or processing.
Proximity (“Prox”) Card	Proximity cards allow access and tracking utilizing contactless technology, usually by communicating through a built-in antenna.
Prox Card Encoder	The Fargo prox card encoder uses an HID ProxPoint® Plus reader mounted on the e-card docking station inside the Printer/encoder. The ProxPoint is a "read only" device producing a Wiegand signal that is converted to RS-232 using a Cypress Computer Systems CVT-2232. Application programs can read information from HID prox cards via a RS-232 signal through a dedicated DB-9 port on the outside of the Printer labeled "Prox."
RAM (Random Access Memory)	A storage device for digital information to be held temporarily, to facilitate processing.
Rasterize	The process of converting the elements of a graphic into a bitmap to be printed.
Reboot	Cycling the power to the Printer so that it resets and reinitializes.
Registration	The quality of the alignment of the separate primary-color images: YMCK.
Resident Font	A set of characters loaded into the Printer memory that can be programmed to print those characters on the card without rasterizing the image.
Resin	A semisolid material.

Continued on the next page

Glossary of Terms (continued)

Term	Definition
Resolution	The number of individual pixel elements in a graphic, taken over a given length, used to indicate the sharpness of the picture and the level of detail. The number of elements in the Printhead determines Fargo Printer resolution.
RFI (Radio Frequency Interference)	Electromagnetic waves radiated by poorly shielded cables or electronic devices that interferes with the operation or data transfer of another device.
RGB (Red/Green/Blue)	The three primary colors of the luminance, or additive, model. Combinations of these three colors can produce practically all the colors of the spectrum that humans can detect. Computer monitors operate on an RGB model.
Ribbon	The dye impregnated film that is used for color printing.
Ribbon cable	Parallel wires held flat in a row by plastic insulation.
RibbonTraq	A Fargo Electronics method of placing bar code-like marks on the transition area between color panels. These marks are arranged for detection by a reflective Sensor array for the identification of Ribbon type and the Ribbon position.
RMA number (Return Merchandise Authorization number)	A number, acquired from Fargo Support, that authorizes the return of merchandise for repair or credit.
Roller	Elements of the Printer used for the transport of media consisting of a rotating steel shaft (for Ribbon) or a rotating steel shaft with a rubber cylinder installed at the shaft midpoint (for moving cards).
RS-232	An interface standard, established in 1969 by the Electronic Industries Association, regarding the connecting of computer peripherals.
Saturation	A measure of the degree of color, from gray, with the same brightness.

Continued on the next page

Glossary of Terms (continued)

Term	Definition
Self-test	A pre-determined print file used to confirm Printer operation typically sent from the Driver or stored in the Printer's memory.
Sensor	An electro-mechanical/electro-optical device used to indicate a change in state in the Printer such as when a card reaches a certain location.
Serial communications	The transfer of data, one bit at a time and in sequential order, using a single wire.
Serial interface	A sub D 9 pin input/output port on the Printer, used for serial communication with the PC for AS400 operating systems or for e card encoding.
SIMM (Single In-Line Memory Module)	An array of memory chips, attached to a printed circuit board that installs in a slot on the main board.
Simplex	Single-sided printing.
SmartGuard	An application from Fargo Electronics that allows users to prevent access to the Printer through the use of a personally encoded smart card.
SmartGuard™	SmartGuard is a Printer security option that uses a custom access card and a built-in reader to restrict Printer access. Only a valid access card can enable the Printer to print cards.
SmartShield™	This option allows the Printer to print custom, security images on the card that reflect under a black or UV light source.
Smart Card	Smart cards have an embedded computer circuit that contains either a memory chip or a microprocessor chip. There are several types of smart cards: Memory, Contact, Contactless, Hybrid (Twin), Combi (Dual Interface), Proximity and Vicinity.
Software	Instructions saved in computer memory that directs the computer to perform certain tasks and functions.
Spooler	A computer application that allows the spooling of print jobs.

Continued on the next page

Glossary of Terms (continued)

Term	Definition
Spooling	Rather than moving a print job directly to the Printer, the job is written to the disk so that the user can access the application faster while Windows takes care of printing in the background.
SS (Start Sentinel)	The character denoting the end of a magnetic data string.
Stacker	The device that moves the finished cards onto the output column, ordering them "First In, First Out".
Stepper Motor	A Motor whose shaft turns in discrete steps, rather than continuously.
String	A sequence of characters that form a line of data.
Surface mount	A method of mounting circuit elements onto the surface of a circuit board, attached at solder pads, rather than through holes in the board.
Surge Protector	An electronic device, placed in serial to the Printer's power supply, that prevents damage to the Printer from electronic surges and electrical current that is outside of the normal parameters.
Switch box	An electromechanical device to which a user may connect several peripheral devices to the parallel port simultaneously, yet using the selector switch to designate the active port.
TAC	Thermal Acceptance Composite cards. Card stock produced by laminating sheets of PVC with sheets of PET for better thermal distortion resistance. Ultra III cards.
Temp file	A temporary file, generated automatically by Windows, to store the information for an active document. Windows should delete these files when the application is closed.
Test-print	A file stored in or generated through windows that is sent to the Printer to test basic functionality.
Thermistor	An electronic resistor on the Printhead with a resistance value that varies in proportion to the heat to which it is exposed.

Continued on the next page

Glossary of Terms (continued)

Term	Definition
Thermocouple	A device for measuring temperature using a junction of two wires of dissimilar metals that produce a voltage when heated that varies proportionally with the temperature.
Through-hole	A method of mounting circuit elements with the leads passing through holes in the circuit board and soldered on the opposite side.
Timeout	An interruption of a print job that occurs when a function is not completed in the time allotted by the operating system.
TOF (Top of Form)	The leading edge of the card, as it travels through the Printer.
Track	The area on a Magnetic stripe designated to contain the magnetic data string.
Troubleshooting	The process of investigating and determining the cause of a problem.
TrueType (TT)	A font format that produces each character using a mathematical equation, rather than a graphical representation, resulting in a much sharper, cleaner image.
UltraCard	The Fargo brand of card stock, recommended for use in Fargo Printers, with the necessary glossy surface and composed of PVC.
UltraCard III	The Fargo brand of card stock, recommended for use in Fargo Printers that laminate, with the necessary glossy surface and composed of PVC and PET to prevent heat distortion.
Update	The process of installing a new revision of software or firmware to implement new changes to the Printer's command codes and procedures.
UPS (Un-interruptible Power Supply)	An AC power supply, typically powered by batteries, which provides temporary power to the PC or Printer during an interruption of the supply voltage.

Continued on the next page

Glossary of Terms (continued)

Term	Definition
USB (Universal Serial Bus)	A 1.5M/sec (12Mbit/sec) serial communication interface that can support 127 separate devices consisting of 4 wires: power, ground, data in and data out.
Virtual Memory	A technique used by Windows when chip memory is exhausted, in which data is written to the hard to hold data temporarily and support Window's operations.
Wrinkle	The appearance in the card image of wavy or arched lines, either colored or clear, caused by improper film or Ribbon tension.
YMC	The designation of colored Ribbon by the panels of color in the order in which they are printed: Yellow (Y), Magenta (M), Cyan (C).
YMCK	The designation of colored Ribbon by the panels of color in the order in which they are printed: Yellow (Y), Magenta (M), Cyan (C), Black (K).
YMCKH	The designation of colored Ribbon by the panels of color in the order in which they are printed: Yellow (Y), Magenta (M), Cyan (C), Black (K), Heat Seal (H).
YMCKK	The designation of colored Ribbon by the panels of color in the order in which they are printed: Yellow (Y), Magenta (M), Cyan (C), Black (K), Black (K) (the second K is for backside, black only printing).
YMCKO	The designation of colored Ribbon by the panels of color in the order in which they are printed: Yellow (Y), Magenta (M), Cyan (C), Black (K), Overlay (O).
YMCKOK	The designation of colored Ribbon by the panels of color in the order in which they are printed: Yellow (Y), Magenta (M), Cyan (C), Black (K), Overlay (O), Black (K) (used for backside, black only printing).

Section 15: Index

A

About button, 6-9
AC - Alternating Current, 15-1
Accepted Card Thickness, 2-3
Accepted Card Types, 2-3
Accepted Standard Card Sizes, 2-3
Access Card, 15-1
Adhesion, 15-1
Adjusting the Image Darkness, 4-43, 4-45
Agency Listings, 2-2, 2-3
Algebraic, 6-13, 15-1
ANSI (American National Standards Institute), 15-1
AS400, 15-1
ASCII (American Standard Code for Information Interchange), 15-1
ASCII Code, 6-43
ASCII Offset, 6-38
AT, 15-1
automated Flipping Module, 2-16

B

B (Black), 15-1
Barcodes, 15-2
Batch print, 15-2
Battery Back-up, 15-2
Bi-directional, 15-2
BIOS (Basic Input/Output System), 15-2
Bit, 15-2
Bit Density, 6-35
Bit map, 15-2
blocked Sensor, 4-32
Board, 15-2
Boot-up, 15-2
Buffer, 15-2

C

Cable, 15-2
Cache, 15-3
Calibrate tab, 4-35, **4-49**, 6-25
Calibrating, 15-3
Cancel button, 2-10
Card Cleaning Roller, 2-10
Card Design, 2-15
Card Feeding Errors, **4-9**, **4-11**, **4-14**, 4-15, 4-17, 4-19, 4-21, 4-24, 4-26, 4-28, 4-30, 4-32
card grid, 6-54
card grid area, 6-53
card grid lines, 6-55
card input, 6-88
Card Input Hopper, 2-10
Card Input Hopper Capacity, 2-3
card orientation, 6-56
card output, 6-88
Card Size, 2-15
card stock scratches, 4-40
Card Surface, 2-15
cards look pixilated or grainy, 4-52
card's Magnetic Stripe/smart chip, 6-19
CD (Compact Disc), 15-3
Centronics, 15-3
Character, 6-43
Character ASCII Offset, 6-38
Character Parity, 6-39
Character Size radio buttons, 6-36
Cleaning Card Feed/Cleaning Rollers, 7-4
Cleaning Cards, 7-2
Cleaning Inside Printer, 4-41
Cleaning Pad, 7-5
Cleaning Pads, 7-2
Cleaning Printer's Interior, 7-5
Cleaning Roller, 15-3
Cleaning the Printhead, 4-40
Clear Protective Overlay Panel, 2-11
Coercivity, 15-3
Color matching, 15-3
Color Matching, 6-13
Color Matching software, 6-13
Colored Resin, 2-12
Colors, 2-3
Communication Errors, 4-3, 4-4
Compressed air, 15-3
Contrast, 15-3
Contrast / Gamma, printed image, 6-21
Control panel, 15-3
CR-100, 15-4
CR-79, 15-4
CR-80, 15-4
CR-80 card size, front/back, 6-72, 6-73, 6-74
CR-90, 15-4
CSA, 2-1
Cursor, 15-4
customized ID software applications, 6-42

D

Darkness, 15-4
Data Cables, 4-35
DB-9, 15-4
DC (Direct Current), 15-4
DC Motor, 15-4
Default, 15-4
Default button, 6-24, 6-31, 6-32
default ISO Standard selections, 6-35, 6-39
default location, 6-76
defined area, 6-56
Defined Area arrows, 6-57
Defined area(s), 6-75
Defined Area(s) check box, 6-75, 6-76, 6-77, 6-81, 6-82, 6-84, 6-85, 6-90, 6-92, 6-93, 6-96
Defined Area(s) option, 6-49, 6-54, 6-73
Defined/undefined area(s), 6-72, 6-74
Defrag, 15-4

Delete button, 6-57
Device Option tab, 4-28
Diagnostic Utility / Diagnostics Tool, 6-5
dimension boxes, 6-76
Dimensions, 2-3
DIP switches (Dual In-line Package Switches), 15-4
Direct-to-Card (DTC) Printing, 15-5
Disable Printing option, 6-20
Disables Magnetic Verification, 4-53
disk cleanup utility, 4-4
Dither, 15-5
DMA (Direct Memory Access), 15-3
Dongle, 15-5
Dot, 15-5
Dot pitch, 15-5
Download, 15-5
DPI (Dot Per Inch), 15-5
DRAM (Dynamic Random Access Memory), 15-5
Driver, 15-5
DTC400/DTC300/DTC300M Card Printer, 8-1
Duplex Printing, 15-5
Dwell Time, 15-6
Dye Migration, 15-6
Dye-Sub Intensity setting, 4-44
Dye-Sublimation, 2-9, 15-6
Dye-Sublimation Cyan Panel, 2-11
Dye-Sublimation Magenta Panel, 2-11
Dye-Sublimation Yellow Panel, 2-11
Dye-Sublimation-Only Print Ribbons, 2-13

E

E-card, 15-6
E-card Docking Station, 15-6
ECP Mode (Enhanced Capabilities Port Mode), 15-6
Edge-to-Edge, 15-6
EE Memory, 15-6
EEPROM (Electrically Erasable Programmable Read Only Memory), 15-6
embedded contaminants, 2-15, 4-41
Emissions Standards, 2-2
Enable MLE Support checkbox, 6-37
Encoder (smart card), 15-6
Encoder (wheel), 15-7
End Sentinel (ES)., 6-42
Engine, 15-7
EOF (End Of Form), 15-7
EPP (Enhanced Parallel Port), 15-7
EPROM (Electronically Programmable Read Only Memory), 15-7
EPROM version number, 4-53, 4-54
Escape sequence, 15-7
ESD, 1-2, 6-1, 7-1, 9-1
ESD (ElectroStatic Discharge), 15-7
Ethernet, 15-7
excessive resin printing problems, 4-47
exposed to static electrical discharges, 7-2

F

Fargo Technical Support, 13-1
Fargo Technical Support via the Web, 13-1
FCC, 2-1
feed card into encoder, 4-4
Field Separator (FS), 6-42
Film, 15-7
Firmware, 15-7
Flash Memory, 15-8
Flipper Table Module, 2-16
Font, 15-8
For Overlay Only, 6-51
For Print and Overlay, **6-51**
FPGA (Field Programmable Gate Array), 15-8
Front and **Back** radio buttons, 2-16
Front Cover, 2-10
Frontside and Backside options
K Panel Resin, 6-68, 6-69, 6-70
Overlay / Print Area, 6-46
Full bleed, 15-8
Full Card option, 6-49, 6-72

G

Gamma, 15-8
Glossy / Matte, 15-8
Glossy PVC, 15-8
Graphical Device Interface (GDI), 15-8
Gray Scale, 15-8

H

Halftoning, 15-8
Hard Drive, 15-9
hard Drive space
adequate or inadequate, 4-4
HDP (High Definition Printing™), 15-9
Head, 15-9
Headlift Motors, 4-32
Headlift Sensors, 4-32
Heat Seal, 15-9
Heat sink, 15-9
HiCo (High Coercivity), 15-9
high-resolution, 24-bit color images, 4-52
Horizontal adjustment, 6-27
HTML (HyperText Markup Language), 15-9
HTTP (HyperText Transfer Protocol), 15-9
Humidity, 2-4

I

IC (Integrated Circuit), 15-9
ID (Identification), 15-9
ID format, 6-15
Identification Card sample, 6-76
IEEE 1284 (Institute of Electrical and Electronics Engineers 1284), 15-10
Image, 15-10
Image Color tab, 6-13, 6-21
Image Darkness option, 6-87
Image Placement, 4-50, 4-51
Image Placement option, 6-88
image placement problems, 4-50
Image Placement value, 6-88
Image Position controls, 6-26

inches or **mm** option, 6-2
incorrect image darkness problems, 4-43
increase Printhead heat, 6-87
Input, 15-10
Input Hopper, 15-10
integral resistor, 7-2
Interface, 2-4
Intermediate Transfer Media (InTM), 15-10
internal electrical components, 7-2
internal Printer settings, 6-25
ISO, 15-10
ISO 7811-2 Magnetic Stripe, 6-41
ISO encoded data format, 6-34
ISO Standard selections, 6-39
ISO Standard settings, 6-32
ISO Track Locations, 6-41

J

JIS II (Japanese Industrial Standard), 15-10

K

K Panel, 15-10
K Panel Resin options, 6-57, 6-81
K Panel Resin tab, 6-71

L

Lamination, 15-10
Lamination Drive, 9-2
Lamination Drive Stepper, 9-2
Lamination Roller Lift, 9-2
Lamination Sensor Calibration, 4-53
LAN (Local Area Network), 15-10
Landscape, 15-11
Landscape orientation, 6-26
LCD (Liquid Crystal Display), 15-11
LED (Light Emitting Diode), 15-11
less heat / more heat, 6-22, 6-23
LoCo (Low Coercivity), 15-11
LPT Port (Line Printer Port), 15-11
LRC Generation, 6-39
LRC Generation Mode, 6-39

M

magnetic data, 6-94
Magnetic Encoder, 4-17
Magnetic encoding, 15-11
Magnetic Offset option, 6-94
Magnetic Offset value, 6-94
Magnetic stripe, 15-11
Magnetic Stripe Encoding Module, 6-30
Magnetic Stripe reader, 4-14
Magnetic Track, 15-11
Magnetic Track Options, 6-31, 6-32
Magnetic Track Selection, 6-31, 6-32, 6-33
Magnetic Track Selection option, 6-32
Magnetic Verify, 15-11
maximum adjustment range, 6-89, 6-94
MB (Megabyte), 15-12
Media, 15-11
Memory, 2-4, 15-12
Menu, 15-12
Metallic Resin, 2-12
Monitor, 6-13
Monochrome, 15-12
Monochrome Dye-Sub (B), 4-53
Monochrome Resin (K), 4-53
Motor Voltages (when active), 9-2
Multi-Language Extension (MLE), 6-37

N

Network, 15-12
None, 6-13

O

Oersted (Oe), 15-12
Offset, 15-12
Omit Signature Area setting, 6-54
On LED, 4-53, 4-54
onscreen card design, 6-77
Operating Temperature, 2-4
optional Magnetic Stripe Encoding Module, 6-30
O-Ring, 15-12
OS (Operating System), 15-12
Output, 15-12
Output Hopper, 15-12
Overlaminate, 15-13
Overlay, 15-12
Overlay / Print Area, 6-54, 6-55
Overlay / Print Area options, 6-51
Overlay / Print Area tab, 6-45
Oversized Cards, 15-13

P

Parallel, 15-13
Parallel port, 15-13
Pause button and LED, 2-10
Pause/Resume button, 4-53, 4-54
PC (Personal Computer), 15-13
PCB (Printed Circuit Board), 15-13
Peel, 15-13
Peel-Off, 15-13
Peripheral, 15-13
PET, 15-14
Photo, 6-14
Pinch Roller, 15-14
Pixel, 15-14
Platen, 15-14
PolyGuard Overlaminate, 15-14
poor image quality problems, 4-50, 4-51
Port, 15-14
Portrait, 15-14
Portrait or **Landscape**, 6-3
Portrait, Landscape, or Rotate 180 Degrees, 6-26
positive / negative Print Length value, 6-89
POSITIVE / NEGATIVE value., 6-88
Potentiometer, 15-14

Power Port, 2-10
power/data cables, 4-35
Premium Resin Black (K), 2-12
prevents magnetic encoding, 6-37
Print All Black With K Panel, 6-71
print and overlay, 6-45
Print Back Side First option, 6-17
Print back side only, 6-18
print both sides, 6-15, 6-16
Print Both Sides option, 2-16, 6-16, 6-18
Print Drive Stepper, 9-2
Print Driver, 15-14
Print Job, 15-14
Print K Only options, 6-82, 6-84, 6-85, 6-90, 6-92, 6-93, 6-96
Print Length option, 6-89
Print Method, 2-4
Print Ribbons, 2-11
Print Server, 15-14
print the first page of a two-page document, 6-17
Print YMC Under K option, 6-82
printable area, 6-25
Printed cards
dark or light, 4-42
printed image diagram, 6-27
Printer Cleaning Kit, 7-4
Printer Driver setup screen, 6-33
Printer Drivers, 2-4
Printer's Front Cover, 7-3
Printer's Front Cover, 7-4, 7-5
Printer's memory, 6-25
Printhead, 2-10, 15-15
Printhead Cleaning Swab, 7-3
Printhead Cleaning Swabs, 7-2
Printhead power cable, 4-35
printing supplies, 7-5
Prox Card Encoder, 15-15
Proximity cards, 2-15
PVC, 15-15
PVC laminate, 2-15

Q

Queue, 15-15

R

RAM (Random Access Memory), 15-15
Rasterize, 15-15
Reboot, 15-15
Registration, 15-15
Regulatory Compliances, 2-1
Reject Hopper, 4-14
Reset Printer, 4-35
Resident Font, 15-15
Resin, 15-15
resin black (K) panel, 6-71, 6-72, 6-82
Resin Black Panel, 2-11
resin dither, 6-14
Resin Heat slide, 6-22, 6-23
Resin Thermal Transfer, 2-9
Resolution, 2-5, 15-16
RFI (Radio Frequency Interference), 15-16
RGB (Red/Green/Blue), 15-16
Ribbon, 15-16
Ribbon / Cards, 1-2, 6-1, 7-1, 9-1
Ribbon cable, 15-16
ribbon Panels, 6-16
Ribbon Sensor Calibration, 4-53
Ribbon Type option, 6-11
Ribbon wrinkle problems, 4-45
RibbonTraq, 15-16
RMA number, 15-16
Roller, 15-16
Roller Up/Down Error, 4-32
Rotate Front 180 Degrees option, 6-56, 6-77
rotate front by 180 Degrees, 6-19
rotates image, 6-19
RS-232, 15-16

S

safety issues, 1-2, 4-2, 6-1, 7-1, 9-1
Safety Standards, 2-2, 2-3
Saturation, 15-16
second K Panel, 6-16
Selecting Orientation - Landscape under Card tab, 6-59
Selecting Orientation – Portfolio under Card tab, 6-61
Selecting the number of copies, 6-4
Selecting the Visual Security Solutions, 6-62, 6-63, 6-64
Selecting the Visual Security Solutions dropdown menu, 6-60
Self-test, 4-53, 4-54, 15-17
Sending data to Track 1, 6-43
Sensor, 15-17
Sensors button, 6-28
Serial interface, 15-17
Settings button, 4-50, 4-51
Shift Data Left checkbox, 6-40
Shift Data Left option, 6-40
SIMM, 15-17
Simplex, 15-17
Smart Card, 15-17
SmartGuard, 15-17
SmartShield™, 15-17
Software, 15-17
special precautions, 1-2, 6-1, 7-1, 9-1
Split 1 Ribbon Panels, 6-16
Spooler, 15-17
Spooling, 15-18
SS (Start Sentinel), 15-18
Stacker, 15-18
Standard Resin Black (K), 2-12
Standard Self-test (YMC), 4-53
Start Sentinel (SS), 6-42
Stepper Motor, 15-18
String, 15-18
Supply Frequency, 2-5
Supply Voltage, 2-5
Surface mount, 15-18
Switch box, 15-18
System Requirements, 2-5

T

TAC, 15-18
Temp file, 15-18
Test Core Pins (Lam), 4-53
Test Core Pins (Print), 4-53
Test Print option, 6-8
Test-print, 15-18
Tests Magnetic Encoding, 4-53
Thermistor, 15-18
Thermocouple, 15-19
Through-hole, 15-19
Timeout, 15-19
TOF (Top of Form), 15-19
Track, 15-19
Track 2, 6-33
Track Data Note, 6-43
track number (1, 2, or 3), 6-42
tracks, 6-33
tracks 1, 2 and 3, 6-43
troubleshoot the Printer, 13-1
Troubleshooting, 15-19
TrueType (TT), 15-19
TrueType black text, 6-71
TÜ V-EMC, 2-1

U

UL, 2-1
Ultra Violet Flourenscing Panel, 2-11
UltraCard, 15-19
UltraCard III, 15-19
UltraCard Stock, 2-15
unblocked Sensor, 4-32
Undefined Area(s) option, 6-49, 6-74
Update, 15-19
UPS (Un-interruptible Power Supply), 15-19
USB (Universal Serial Bus), 15-20
USB Port, 2-10
Using Clean Printer Option, 6-6
Using the Image Color tab, **4-48**

V

Verify data encoded, 4-14
Vertical / Horizontal adjustment arrows, 6-26
Vertical / Horizontal Image Position settings, 4-49
Vertical adjustment, 6-27
Virtual Memory, 15-20

W

Weight, 2-5
Windows 2000/XP, 4-28, 4-35, 7-4
WordPad, **4-4**
Wrinkle, 15-20

X

X and Y boxes, 6-55, 6-77

Y

Yellow, **Magenta** and **Cyan**, 6-21
YMC, 15-20
YMCFKO, 2-14
YMCK, 15-20
YMCK/YMCKK Print Ribbons, 6-16
YMCKH, 15-20
YMCKK, 15-20
YMCKO, 15-20
YMCKOK, 2-14, 15-20